

DEVELOPING A MEASURE OF LEADERSHIP DEVELOPMENT FOR SPORT CLUB  
STUDENT LEADERS: A CROSS SECTIONAL RESEARCH DESIGN

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By

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## **Dedication**

This work is dedicated to Anna Gardner, my wife and soul mate. “She is worth far more than rubies...she is clothed with strength and dignity... ‘Many women do noble things, but you surpass them all’” (Proverbs 31).

## **Acknowledgments**

With humble thanks, I express gratitude for everyone who invested their time in my doctoral life. I thank my committee members—James Barber, Adam Barger, and Megan Tschannen-Moran—for their mentoring and support. I give particular thanks to my advisor, Jim Barber, for his long-standing commitment to my growth as a scholar these past ten years. I thank my research seminar peers for their contributions to my scholarship. To my best friend at W&M, Robert Thompson, I cannot tell you how much your kinship meant to me on our journey—thank you for walking the path with me. Most importantly, I cherish and thank the source of anything I've accomplished: my family. I thank my brother David for showing me that life is full of adventure, and I thank my brother Matthew for showing me that life is about so much more than the self. I also want to thank my uncle, Ron Shackelford, for encouraging me to go to Virginia Tech and to do all the rest. Finally, I owe everything to my parents, Cherie and Glenn Gardner. Thank you, Mom, for being my home-school teacher and for all you gave for us; and thank you, Dad, for always being there and leaving attended every need.

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## **Abstract**

This research study was designed to explore potential variables of Sport Club student leaders' contexts on their leadership development. My specific unit of analysis was the degree to which Sport Club student leaders demonstrated leadership outcomes in leadership skills that aligned with the Sport Club student leaders' contexts. I defined Sport Club contextual variables as being the individual, organizational and institutional variables that differentiate Sport Club teams from interest-based student organizations. I devised a cross sectional study research design with a post-positivist lens in order to study a population of Sport Club student leaders at NIRSA (formerly the National Intramural Recreational Sports Association) member institutions. I viewed the Sport Club student leaders as both participants engaged in a discrete form of student involvement (Astin, 1984) and as leaders of teams (Northouse, 2019). I performed both descriptive and inferential statistical data analysis on a multidimensional leadership scale administered to the sample, in order to analyze Sport Club student leaders' scores across leadership skills and across contextual variables, while controlling for demographic variables at the individual and organizational level. Lastly, I combined the MSL Socially Responsible Leadership Scale (SRLS), Identity Leadership Inventory (ILI) and Emotionally Intelligent Leadership (EIL) scale and added Sport Club contextual variables to create a proposed multidimensional leadership instrument which may be a short form of the EIL, ILI and SRLS scales. Finally, I performed factor analysis to explore a simple factor structure of Sport Club student leaders and their leadership outcomes, followed by a stepwise regression using the EFA factors. Results, implications for practice and recommendations for future research are discussed.

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## CHAPTER 1

### INTRODUCTION

In the past 20 years, U.S. higher education has reconceptualized student learning and acquisition of desired outcomes. The proliferation of learning outcomes assessment, both inside and outside the classroom, by both academic affairs and student affairs units, can be characterized as a proliferation of outcomes assessment across the spectrum of college student involvement experiences. U.S. higher education institutions have attempted to graft learning goals, curricula, and assessment and evaluation mechanisms into all pieces of the whole spectrum of student involvement experiences through certain planning efforts. In a stirring publication entitled *Learning Reconsidered*, the National Association of Student Personnel Administrators (NASPA) called for U.S. higher education to “re-examine some widely accepted ideas about conventional teaching and learning, and to question whether current organizational patterns in higher education support student learning and development in today’s environment” (NASPA, 2004, p. 1).

Alongside arguments for more transformative education, more alignment of student affairs and academic affairs work, and a more coherent student affairs curriculum, NASPA called for student affairs professionals to focus on “transformative learning outcomes” which “are complex and cumulative” and which “result from the knowledge, attitudes, and skills learned in the classroom, experiences across the campus community...including sports teams” (NASPA, 2004, p. 23). NASPA called for student affairs professionals to play a leading role in leadership development among students and sports teams and argued, “These opportunities are

primarily the responsibility of student affairs professionals and include student leadership development, student governance, intramural and recreation programs, health and wellness programs, personal counseling, and co-curricular programming” (NASPA, 2004, p. 23). Student affairs professionals impact the learning and development of nearly 2 million Sport Club athletes across the United States (Dugan et al., 2014). By contrast, roughly 480,000 students competed as National Collegiate Athletic Association (NCAA) athletes in 2019-2020 (NCAA, 2020). The scope of Sport Club participation is an order of magnitude larger than NCAA participation. This study has the potential to affect hundreds of thousands of students who participate in sport clubs as student leaders, for key leadership outcomes.

NASPA (2004) defined two leadership development outcomes specific to collegiate sports teams: *civic engagement* wherein students on sports teams are *effective in leadership* (p. 21), and *practical competence* wherein students on sports teams are *effective in communication* (p. 22). Since *Learning Reconsidered* called for student affairs professionals to focus on transformative learning and on practical leadership development for students on sports teams in 2004, student affairs professionals have engaged in co-curricular programming and research aimed at practical leadership development. A summary of student affairs research into practical leadership development is presented next, followed by a critique of the research and a recommendation for a leadership instrument to make possible assessment and evaluation of leadership development for sport club student leaders.

### **Sport Club Research Summary**

Researchers have studied time management, delegation skills and retention rates as outcomes of Sport Club participation (Hall-Yannessa, et al., 2008; Kampf & Teske, 2013). However, given the importance of leadership as a goal of 21st-century education, a fuller

understanding of how students develop as leaders of student organization Sport Club teams is needed to align higher education institutions' leadership outcome goals, curricula and assessment and evaluation structures with student leadership involvements in Sport Club environments.

The literature and research about student involvement in Sport Clubs is inclusive of goals and intended outcomes of participation, of the participation environment, and of participant experiences. Researchers have defined the Sport Club participation environment in detail and with a consensus overarching purpose: Sport Club programs function as leadership “laboratories” for students (Hall-Yannessa & Forrester, 2005, p. 7). The literature operationally defined Sport Clubs as “a group of students that voluntarily organized to further their common interest in activity through participation and competition” (Roberts, et al., 2003, p. 11). Competition against other institutions in leagues regulated by national governing bodies other than the NCAA is arena in which students engage in a meaningful form of student involvement and leadership.

Although Sport Club programs share leadership development as a common purpose (Hall-Yannessa & Forrester, 2005), Sport Club programs vary by resources and structure across higher education institutions to a degree that may correlate with varied participant experiences. Some Sport Clubs organize and schedule their own competitions against other institutions, independent of any formal leagues or national governing bodies. Sport Club teams are composed of mostly undergraduate students who do not receive scholarships. Constitutionally elected student leaders lead Sport Club teams. Although Sport Club programs vary in their level of institutional support for Sport Club teams, all Sport Club participant experiences vary by involvement type. For example, Sport Club participants may practice and compete for their team without performing any administrative or organizational functions. Sport Club participants who

hold constitutionally elected officer roles perform a variety of managerial and leadership tasks for their team. Thus, Sport Club student leaders' experiences may vary within the operationally defined arena in which Sport Club teams compete.

Research has found several positive outcomes associated with Sport Club participation. For example, Sport Club participants were found to have higher odds than non-participants of self-reporting an A and/or B grade point average than a C grade point average (Vasold et al., 2019); Sport Club participants were found to have reported significant problem-solving skills, information processing skills, and decision-making skills (Lifschutz, 2019); and, Sport Club participants also reported significant increases in more than 41 outcomes after Sport Club participation (Haines & Fortman, 2008). Importantly, Sport Club participation correlated with significant retention rates (Kampf & Teske, 2013). In sum, Sport Club participants report significant academic, interpersonal, and intrapersonal development as a result of their experience.

The confluence of Sport Club participation environments and leadership as an intended outcome of participation marks an important area of the literature: the potential to calibrate Sport Club environments to create intentional Sport Club involvement experiences to foster leadership growth among Sport Club student leaders. In order for student affairs professionals to calibrate Sport Club environments to enhance leadership development, it appears necessary to create a sport club leadership instrument that would enable measurement of leadership growth.

### **Statement of the Problem**

Although leadership is a desired learning goal and outcome, Sport Club environments and participation experiences are not understood in terms of their current or possible impact on leadership among Sport Club student leaders. Hall-Yannessa and Forrester (2005) identified the

development of leadership skills as a research gap; and subsequent research has shown “little evidence that documented the development of leadership skills among students who serve in officer roles” (Flosdorf et al., 2016, p. 108). Despite the lack of a comprehensive Sport Club leadership construct, measure or findings, researchers have reported some growth among Sport Club student leaders as a result of their experiences.

Hall et al. (2008) found Sport Club officers gained planning and delegation skills as a result of their experience. Dugan et al. (2014) measured Sport Club participant leadership growth using the Multi-Institutional Study of Leadership (MSL) survey instrument, an instrument that employed the Social Change Model of Leadership as a conceptual framework. Flosdorf et al. (2016) found that Sport Club presidents gained social competence, vocational competence and practical competence as a result of their experience. Correia-Harker and Hall (2019) analyzed 2017 MSL survey data and found that sport club participants reported uneven leadership outcomes. Correia-Harker and Hall recommended future research that “could help educators confirm the influence various campus recreation activities have on leadership development” and “discover why particular recreation activities have an impact on this form of development” (p. 30).

The Sport Club officer leadership development research gap stems from a lack of empirical research into the ways that Sport Club leadership outcomes are influenced by the contextual factors of the students’ backgrounds, their Sport Club organizations’ involvement demands, and their institutions’ support. In short, the research has not reported empirically the impact of the participation environment on Sport Club student leaders’ outcomes. I addressed this primary research problem, determining the influence of Sport Club leaders’ contexts on their

leadership development outcomes, in this dissertation study conducted during the COVID-19 pandemic. I asked respondents to recall 2019-2020 experiences in the fall of 2021.

### **Conceptual Framework for a Leadership Process Model Nested in Student Involvement**

My conceptual framework is a blueprint (Grant & Osanloo, 2014) that portrays the way my experiences advising Sport Club student leaders have informed my beliefs about the leadership process in which Sport Club students engage. My conceptual framework combines two models: Fischer et al.'s (2016) leadership process model and Astin's (1991) I-E-O College Impact Model adapted by Strayhorn (2018). My study nests the leadership process model within the college impact model in order to conceptualize the process by which student involvement in Sport Club participation fosters growth in leadership fit for the Sport Club context.

*Process models* allow researchers to answer the “how and why of effects” in leadership research (Fischer et al., 2016, p. 1727). According to Fischer et al. (2016),

Leadership is a social and goal-oriented influence process, unfolding in a temporal and spatial milieu. In this process, leadership variables (e.g., a leader's behaviors) affect a distal outcome (e.g., team performance) through more proximate mediating constructs, such as follower motivation; the term leadership implies that a leader has a greater impact on a single follower than vice versa. Identifying such processes is challenging because the effects on mediating constructs or on outcomes do not necessarily occur within the same temporal and spatial dimensions (cf. Senge, 2014). (Fischer et al., 2016, p. 1,727).

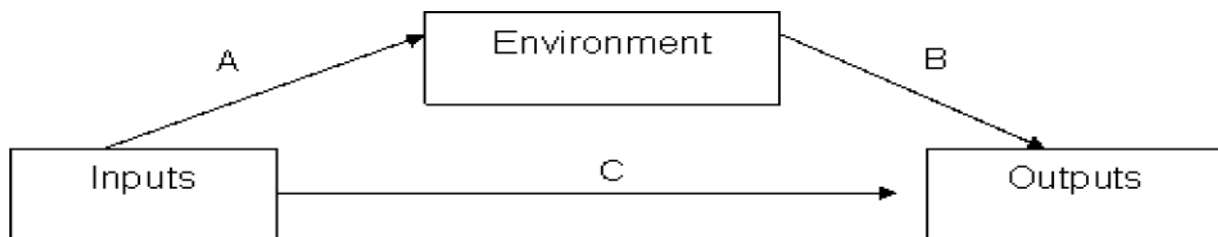
Process models are further characterized as mechanisms to define boundary conditions and generalizability (Durbin, 1976) in an “input-process-output logic” (Fischer et al., 2016, p. 1,727).

This process model logic matches the logic of the student involvement theory I-E-O College Impact Model (Astin, 1991).

*The I-E-O College Impact Model*, contains student inputs and student environments that factor into student outputs of desirable learning. Astin (1991) defined student inputs as student demographic characteristics and defines student environments as student experiences.

**Figure 1**

*I-E-O College Impact Model*



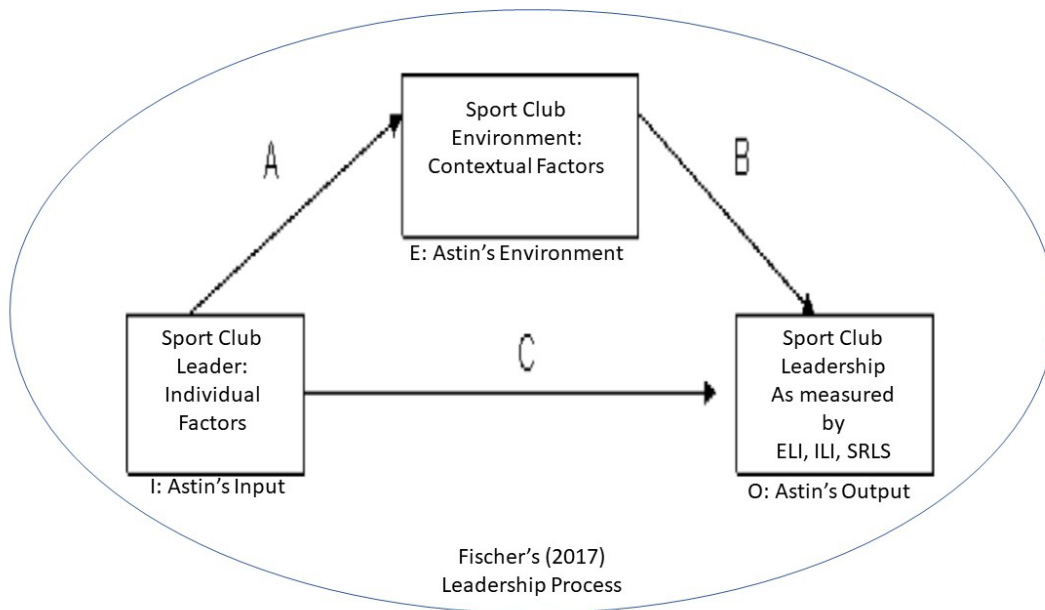
*Note.* From “College students’ sense of belonging,” by T. Strayhorn, 2018, Routledge, p. 3 and based on “Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education” by A. W. Astin, 1991, Rowman & Littlefield.

*A nested framework for Sport Club involvement and leadership* defines student inputs as student demographic characteristics and defines student environments as student experiences. I nest Fischer et al.’s (2016) leadership process model in Astin’s (1991) I-E-O College Impact Model. Grant and Osanloo (2014) noted the conceptual framework is a description of the researcher’s own thinking about the philosophy, epistemology, methodology, and analysis of the dissertation. Figure 2 presents my thinking about Sport Club leadership as a process in which Sport Club student leaders of varying observable individual characteristics proceed across time through a leadership experience in the Sport Club environment and through that temporal experience practice and develop leadership skills. The nested framework presented in Figure 2 is based on my experience advising and observing Sport Club student leaders. I noticed Sport Club

student leaders practice emotional intelligence, develop a sense of team identity, and lead responsibly.

**Figure 2**

*A Nested Framework: I-E-O College Impact Model Nested Within a Leadership Process Model*



*Note.* I-E-O College Impact Model adapted from “College students’ sense of belonging,” by T. Strayhorn, 2018, Routledge, p. 3 and based on “Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education” by A. W. Astin, 1991, Rowman & Littlefield. Nested in a leadership process adapted from “Leadership process models: A review and synthesis”, by T. Fischer, J. Dietz, & J. Antonakis, 2016, *Journal of Management*, 43(6), p. 1726 (<https://doi.org/10.1177/0149206316682830>).

The alignment between a leadership process model and a student involvement model allowed me to effectively overlay mediating constructs of student involvement on Sport Club leadership development measured by a multidimensional instrument. The use of a leadership

process model was necessary and appropriate because I addressed an environment’s impact on inputs and outputs. I benefitted from a leadership process model that has been applied to both *individual* (Beyer et al., 1997; Druskat & Wolff, 1999; Kellett et al., 2006; Zaccaro et al., 2015) and *team* (Ayoko & Chua, 2014; Edmondson, 2003; Hackman & Wageman, 2005; Williams et al., 2009) levels of analysis.

**Table 1**

*Alignment of a Leadership Process Model and a Student Involvement Model*

<b>Type of Model</b>	<b>Factor 1</b>	<b>Factor 2</b>	<b>Result</b>
Leadership Process	Input	Process	Output
College Impact	Inputs	Environment	Outputs

***Constructs***

My conceptual framework included Astin’s (1984) Theory of Student Involvement and three leadership scales that collectively measured multiple dimensions of leadership, as a composite leadership construct occupying the Output (O) in the I-E-O model. The leadership scales I selected for inclusion in my conceptual framework included the following: Emotionally Intelligent Leadership (EIL), Identity Leadership Inventory (ILI), and Multi-Institutional Study of Leadership (MSL) Socially Responsible Leadership Scale (SRLS).

The EIL scores Sport Club student leaders’ self-reported emotional intelligence as applied in their leadership. The EIL was included to measure Sport Club student leaders’ ability to foster connections supportive of the dependent variable of team development. I chose the EIL based on my observations of Sport Club student leaders employing a sense of self-awareness of

their own emotions and those of others, and the ways people navigated their emotions in the process of leading and competing against others.

The ILI scores Sport Club student leaders' self-reported ability to lead in a way that their identity aligned with and advanced the identity of the Sport Club team. The ILI also scored Sport Club student leaders' self-reported ability to model and develop the Sport Club team's identity in other Sport Club team members. I have observed Sport Club student leaders practice emotional intelligence skills while crafting a team identity as they lead.

The MSL included multiple leadership scales and measured leadership using the social change model of leadership. The social change model of leadership basis lends the MSL toward leadership research into leaders' ability to mobilize followers toward shared objectives centered on shared values toward positive social change. I included the MSL SRLS to measure Sport Club student leaders' self-reported ability to use values-based leadership approaches and collaborative leadership, which I have observed Sport Club student leaders to practice as they share decision-making at executive board meetings.

### **Hypothesized Relationships Among Constructs**

In this study, I hypothesized that Sport Club student leaders' leadership scores on a multidimensional leadership instrument were influenced by Sport Club student leaders' contextual variables. I hypothesized that Sport Club student leaders' contextual variables co-varied across individual, organizational and institutional variables of contextual influences based on my Sport Club experience. I hypothesized that Sport Club student leaders' leadership development conceptually favored the expression of identity and competition-based leadership behaviors and skills that allowed Sport Club teams to pursue sports performance rather than social-change skills.

Individual and Contextual Variables included Race, Sex as Male/Female, NCAA Sport, and Class Year. Educational leadership researchers Brooks et al. (2007, p. 765) found that “leaders construct leadership norms and beliefs based on race, and that these are intertwined with other social dynamics such as gender and social class.” I included demographic questions in my survey instrument in order to determine if differences in leadership norms and beliefs were found in leadership survey results, based on individual and contextual differences.

Organizational Variables include Member Dues, Operating Budget, Competition Quantity, and Involvement Quantity. I believed that as a Sport Club student leader expends involvement time and quality of effort, the Sport Club student leader realized leadership growth as a result of their experience. I also believed that after a certain number of quality involvement hours of leadership engagement, a Sport Club student leader experienced diminishing returns of leadership growth as a result of strain on their finite time relative to other co-curricular and academic forms of involvement. Therefore, I hoped to measure student involvement according to self-reported involvement quantity and quality, along with self-reported investment in their experience in the form of member dues and overall operating budget.

Institutional variables included University Allocated Funds, Paid Coach, and Report to Athletics or Student Affairs. My experience as a Sport Club administrator led me to believe that Sport Club student leaders benefitted from sufficient funding support from their institution; as well as from the presence of a paid coach to model team leadership, and from the mentoring of a student affairs administrator educated in student leadership development differently than from an Athletics administrator.

### **Research Questions**

This study explored the following research questions.

1. To what extent do the items in the ELI, ILI, and SRLS co-vary to form a coherent leadership construct?
2. To what extent do individual, organizational and institutional variables explain variance in Sport Club leadership scores?

### **Significance of the Study**

This study contributed to educational research in its development and exploration of a new multidimensional leadership instrument that allowed me to explore the contextual variables of Sport Club student leaders on their leadership development, team performance and team development. My quantitative research design provided a deeper understanding of several variables that comprised Sport Club contextual influences on their leadership behaviors and skills. Such a deeper understanding of the variables will enable collegiate recreation professionals to tailor leadership development programs to Sport Club student leaders' needs according to the Sport Club student leaders' individual, organizational and institutional context.

This study was conducted so that Sport Club student leader needs may be understood in the context of the discrete form of student involvement that is Sport Club team leadership. Sport Club student leaders' involvement varied across sports and institutions. My study attempted to be key to uncovering the ways that leadership development was influenced by contextual variables that wholesale leadership studies and instruments have not yet explored or confirmed. Given the significant population size of Sport Club student leaders, participants and teams relative to varsity athletes and teams, my study was also significant in its potential impact on a national population of athletes and leaders that far exceeds varsity athletics in scope.

## **COVID-19 and the Study**

The pandemic conditions of COVID-19 affected this study. Throughout the pandemic, Sport Club student leaders' contexts and involvement have adapted to pandemic conditions. Across the United States, most Sport Club teams refrained from competition or travel during the Fall 2020 and Spring 2021 semesters. Sport Club teams may have continued weekly practices using COVID-19 precautions. Student leaders therefore navigated a significant challenge to their team's performance and development. It may be theorized that Sport Club student leaders also adapted leadership behaviors and used skills in adaptive ways to cope with the COVID-19 pandemic's challenge to Sport Club student leaders and teams.

I attempted to account for the effects of COVID-19 on my study's conceptual framework and constructs by framing the situation in terms of normal operating conditions. For example, I addressed questions about the number of weekly practice hours, cost of annual team dues per member and presence or absence of a Sport Club coach based upon actual normal operating conditions before and presumed normal operating conditions after the pandemic.

I asked respondents to provide self-reported information from the 2019-2020 academic year in response to items related to my model's organizational and institutional predictor variables. For example, my survey asked respondents to self-report how many weekly practice hours on average their Sport Club engaged in during the Fall 2019–Spring 2020 semesters prior to the declaration of pandemic in March 2020.

## **Summary**

This study contributed to educational research through the development and exploration of a new multidimensional leadership instrument that measured Sport Club leadership. The development and exploration of a new leadership instrument for Sport Club student leaders was a response to *Learning Reconsidered*, a NASPA (2004) call for student affairs professionals to focus on “transformative learning outcomes” which “are complex and cumulative” and which “result from the knowledge, attitudes, and skills learned in the classroom, experiences across the campus community...including sports teams” (p. 23) appears to reflect the transformative leadership learning experience that Sport Club officers enjoy in the leadership laboratory in which they practice leadership behaviors and skills daily. My study could affect hundreds of thousands of Sport Club student leaders, aiding in the development of practical leadership for a significant population of students.

In the next chapter, I explore leadership as it has been described by leadership theorists. It was my intention to succinctly describe various leadership theories and the categories and taxonomies so developed by leadership theorists. To apply a new leadership instrument for Sport Clubs to practice, student affairs professionals will benefit from developing a working definition of leadership and how practical Sport Club leadership develops among Sport Club student leaders.

## **Definition of Terms**

*Leadership.* This study’s definition of leadership adopted the Hill Model of Team Leadership to contextualize leadership in terms of the actions that Sport Club student leaders take with respect to internal and external situations and with respect to task or relational tasks. Leadership in this study was defined as the degree to which Sport Club student leaders apply

multidimensional leadership skills and behaviors to achieve task-based and relationship-based team objectives.

*Leadership Capacity.* According to Dugan et al. (2014), *Leadership Capacity* is a construct in the MSL that measures “the knowledge, skills, and attitudes associated with the ability to engage in leadership” (Day et al., 2009; Hannah et al., 2008). I identified the SRLS as a scale to be included in a multidimensional leadership instrument, due to the importance of the SRLS in the MSL leadership survey.

*Leadership Efficacy.* According to Dugan et al. (2014), *Leadership Efficacy* is “One’s internal belief in the likelihood that they will be successful when engaging in leadership” (p. 6).

*Post-positivist research paradigm.* The post-positivist research paradigm holds that knowledge must be understood in its context; therefore, post-positivists “do not assume that their methods ensure certainty and universally generalizable results” (Charney, 1997, p. 579). Post-positivist methods “pay attention to individuality in order to make sure that the situations and samples studied are representative...and methods are developed to correct for these factors which are problematic for the goals of this research paradigm” (Cooper, 1997, p. 558).

*Sport Club.* A Sport Club is a student led and student run organization recognized by higher education institutions for the purpose of competing against Sport Club teams from other institutions.

*Sport Club Coach.* A Sport Club coach is a paid or volunteer coach who may report to a Sport Club student leader or student executive board, or to the institution.

*Sport Club student leader.* A Sport Club student leader is an elected positional leader who may serve as a President, Vice President, Treasurer, Secretary, or other positions constitutionally defined and empowered. Additionally, Sport Club student leaders may occupy

positional leadership roles not defined in their Sport Club constitution, such as social chairs, fundraising chairs, or other positional leadership roles created to achieve organizational success across task-based or relationship-based dimensions.

## CHAPTER 2

### REVIEW OF RELATED LITERATURE

In this chapter, I explored leadership and key theoretical perspectives which attempted to define and operationalize leadership. Leadership has been described as an indistinct construct measured with imprecise instruments (Northouse, 2019). And yet leadership is an important and long-standing core educational outcome of U.S. higher education. To define and measure leadership development for college student leadership programs and experiences may be both challenging and compelling work for educational researchers. If my study were to affect hundreds of thousands of Sport Club student leaders, it would necessarily capture and portray a practical definition of leadership and a corresponding instrument to measure Sport Club officer leadership development for Sport Club administrators.

This literature review was focused on leadership development among college students engaged in Sport Club team leadership positions. In this literature review, I examined both leadership theory and Sport Club research to build a conceptual framework for the development of leadership among Sport Club student leaders. *Leadership theory* emerged in the scientific literature at the turn of the 20th century in the form of a trait-based understanding of leadership (Northouse, 2019). In the 1950s, leadership scholars increasingly focused on leadership behaviors rather than on leadership traits; in the 1960s, leadership scholars recognized leadership contingencies and the relationship between leaders and followers as a critical component of leadership effectiveness, regardless of leadership behavior. Thus, over time, scholarship on leadership has increasingly conceptualized leadership as a skill, rather than as a trait or behavior.

Contemporary leadership theory may broadly define leadership as a skill observable as a leader's "purpose-driven action that brings about change or transformation based on values, ideals, vision, symbols, and emotional exchanges" (Upton, 2012, p. 5). The National Intramural Recreational Sports Association (NIRSA) adopted such a purpose-driven action conceptualization of leadership in its mission to develop college students into leaders by way of teamwork in competition, fitness and recreation. Sport Club teams challenge college students to practice the skill of leadership in constitutionally elected positional leadership roles. Fortunately, higher education researchers have studied Sport Club leadership and other outcomes in response to the *Learning Reconsidered* call for sports teams to be included in leadership research.

The domain of *Sport Club research* is entrenched in college student development theory, which suggests that student involvement in educational environments produces desirable educational outcomes for involved students. Research on student involvement in Sport Club environments builds on a framework of literature related to outcomes of student involvement in a variety of educational environments, including undergraduate research, study abroad and service experiences, and employment both on-campus and off-campus. Leadership theory and Sport Club research converge at a vital point of intersection: the process by which students involve themselves in the act of purpose-driven leadership of Sport Club teams. Leadership theory provides an array of leadership concepts loosely organized by trait, behavior and skill approaches to leadership, while Sport Club research anchors college students' leadership as an outcome of an environment with inputs and features specific to Sport Club student involvement. Both leadership theory and Sport Club research were necessary ingredients in the formulation and exploration of a Sport Club leadership construct and scale of measurement.

## **Leadership Theory**

### ***Major Elements of Theory***

Leadership is a complicated and multidimensional construct. Meta-analyses have argued that leadership bears many definitions (Northouse, 2019), that leadership theories lack “a coherent and meaningful conceptual construction” (Zaccaro, 2007, p. 6) and that leadership research has evolved from trait-based *great man* theories to “state based” (Hoffman et al., 2011, p. 348) skill and behavior theories. Northouse (2019) presented three main leadership concepts: leadership as trait-based theory, leadership as skill-based theory and leadership as behavior-based theory (Northouse, 2019). Higher education leadership courses critique all three concepts.

The following sections of this literature review examined research across leadership traits, behaviors, and skills perspectives. My aim was to synthesize the leadership theories and apply them to the Sport Club student involvement context. Accordingly, the literature review summarized a set of leadership theories that informed the Sport Club student involvement context and my research design and methodology.

**Trait-Based Theories of Leadership.** The Trait Theory of Leadership held that leaders are born with inherent traits of leadership (Northouse, 2019). Leadership trait theory was derived by observation of government and military personnel (Northouse, 2019). Scholars such as Mumford et al. (2000), Yukl (2006), and Zaccaro (2007) advanced recent trait-based leadership models whose conceptual framework built upon early leadership trait theory by nuancing leadership trait malleability and proximity to state like leadership constructs. Hoffman et al., (2011) performed a meta-analysis of trait-based leadership literature and reported that “recent conceptual models have expanded their treatment beyond traditional, trait-like individual differences to include proximal, malleable individual differences” (p. 349), a response to

critiques of trait-based leadership theory and leadership trait instruments.

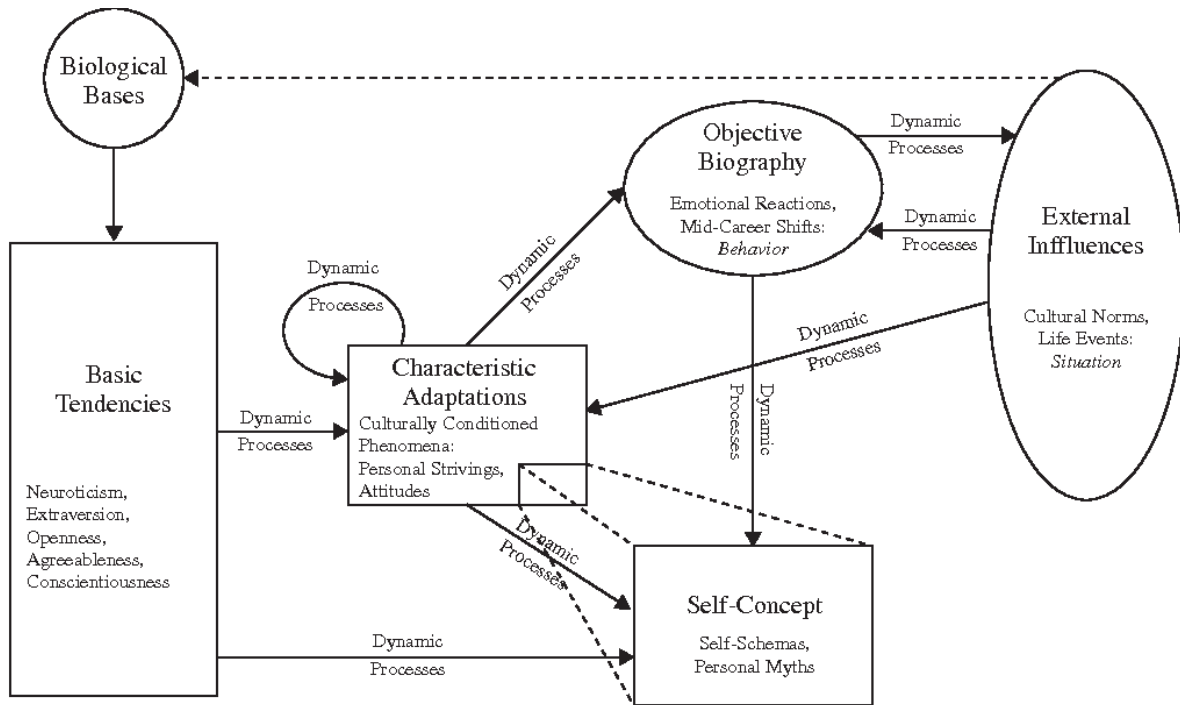
As an example of leadership traits, the Northouse (2019) Leadership Trait Questionnaire included the following traits: articulateness, perceptiveness, self-confidence, self-assuredness, persistence, determinedness, trustworthiness, dependableness, friendliness, outgoing-ness, conscientiousness, diligence, sensitiveness, and empathetic-ness. Northouse (2019) described the Leadership Trait Questionnaire as an instrument for learning about the self and noted that it was not a validated instrument. Early trait-based leadership scholars recorded so many initial leadership traits that subsequent leadership scholars found it necessary to identify leadership trait factors which subsumed similar leadership traits underneath leadership factors (Northouse, 2019).

In an attempt to narrow down the broad list of leadership traits found in the literature, Cattell (1946) developed a 16-factor leadership trait theory using the Sixteen Personality Factor Questionnaire (16PF). After Cattell's work, Norman (1963) performed a factor analysis of the 16PF and recommended the use of a five-factor model. Ultimately, McCrae and Costa (1999) developed a five-factor theory personality system using the five-factor model, greatly reducing the number of factors to be measured in leadership assessments. The dimension reduction work of Cattell, Norman, and McCrae and Costa simplified leadership trait theory by combining like factors and variables into a simpler structure. As trait-based leadership scholarship progressed from cataloguing observable traits to performing dimension reduction techniques through quantitative analysis of leadership scales, it became possible for researchers to assess the efficacy of leadership trait theory, to some degree. Logic models with quantitative measurement items, such as those observable in the five-factor theory personality system depicted below in Figure 3 on Page 22, characterized 20th-century leadership scholarship into leadership traits. In the late

20th century, and into the 21st century, scholarship on leadership traits decreased in favor of other perspectives on leadership.

**Figure 3**

*A Representation of the Five-Factor Theory Personality System*



*Note.* Core components are in rectangles; interfacing components are in ellipses. Adapted from “A five-factor theory of personality” by R. McCrae and P. Costa, *Handbook of personality: Theory and research*, edited by L. Pervin and O. John, 1999, p. 73, Guilford Press.

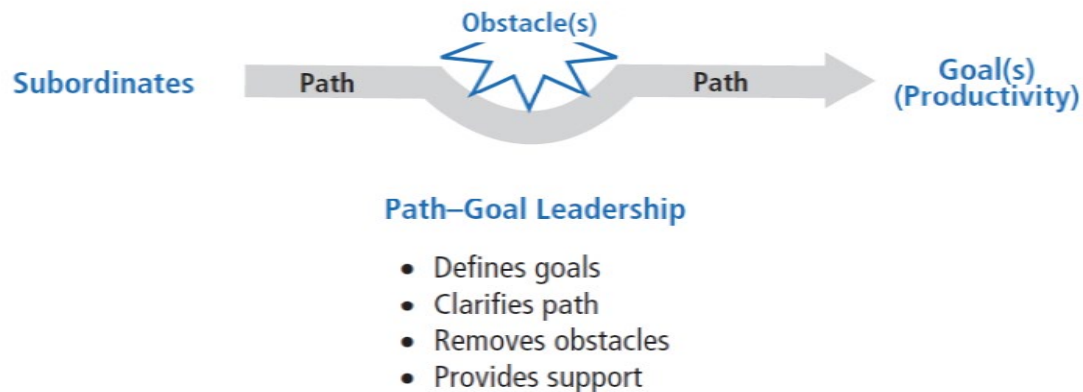
To elucidate the process behind a common trait theory, I provided the five-factor theory logic model in Figure 3 on Page 22. The model posited that biological bases produced stable basic tendencies that predictably informed dynamic personality processes such as self-concept and characteristic adaptations—a trait theory. The five-factor theory logic model placed basic tendencies (neuroticism, extraversion, openness, agreeableness, and consciences) as trait-based origin points from which people made adaptations based on external influences such as cultural norms or life events (Pervin & John, 1999). That the basic tendencies of people were influenced by biological bases rather than by external influences or personal behaviors was a defining characteristic of trait-based leadership theories. Other perspectives on leadership were focused more on behavior and less on pre-set traits grounded in biological bases. If this model were altered so that the origin point lay in behaviors catalogued in some taxonomy of leadership behaviors, the model would be more behavior-based and less trait-based.

**Behavior Based Theories of Leadership.** The Behavior Theory of Leadership holds that leaders exercise behaviors of leadership. House and Mitchell (1974) reported four behaviors or a four-factor model of leadership behavior theory: directive leadership, supportive leadership, participative leadership, and achievement leadership. House and Mitchell (1974) applied the four behaviors of leadership to a path-goal theory of leadership, wherein a leader defines goals for followers to follow a path toward productivity or other desired goals (see Figure 4). The path-goal theory of leadership also included other leadership behaviors: to clarify followers' path to goals, to remove obstacles from the followers' path and to provide support to followers along the path. Path-goal theory conceptualized leadership as a process in which leaders seek to understand follower motivation and to identify meaningful rewards for followers. The leadership behaviors

of directive, supportive, participative and achievement leadership necessitate active leadership participation with followers, according to House and Mitchell (1974).

#### Figure 4

*Path-Goal Leadership Theory Model*



*Note.* “The Path-goal theory of Leadership”, by R. House and R. Mitchell, 1974, *Journal of Contemporary Business*, 9, 81-98, (<https://doi.org/10.4236/ica.2011.22018>), adapted with permission from *Leadership theory and practice*, by P. Northouse, 2019, p. 116. Sage.

Path-Goal leadership was an excellent example of behavior-based theories of leadership because Path-Goal theory held that follower motivation was a key to leadership. True to a behaviorist paradigm, Path-Goal theory helped leaders to identify which leadership behavior would result in a desired corresponding follower behavior. If a follower demonstrated low capacity and low motivation, for example, then a leader would apply directive leadership behaviors characterized as highly regimented and highly prescriptive instructions for the follower to comply with little reasoning or problem-solving necessary for the follower to complete the task. Path-Goal leadership was an obvious contrast to more transformational leadership behavior paradigms that sought to inspire a change in follow values.

Transformational leadership is another branch of leadership behavior theory.

Transformational leadership was developed by Burns (2010). Recent scholarship has developed instruments to assess transformational leadership in various contexts. For example, Posner and Kouzes (1988) developed the Leadership Practices Inventory based on their conceptual framework adapted from transformational leadership theory. The model postulated that there are five exemplary leadership practices: Model the Way, Inspire a Shared Vision, Challenge the Process, Enable Others to Act, and Encourage the Heart. The Leadership Practices Inventory practices combine to form a five-factor transformational leadership model. The Leadership Practices Inventory was appropriate for leadership models rooted in transformational leadership with change as a purpose of both leadership and the organization. After the Leadership Practices Inventory was developed, Kent et al. (2001) created the Leadership Behavior Inventory as an instrument to measure transformational leadership behaviors according to subordinate ratings of their supervisors. The involvement of subordinates in leadership assessment appears again in my discussion on leadership theory assessment.

The Emotionally Intelligence Leadership for Students: Inventory 2.0 was developed by Shankman et al. (2015) as an assessment of the construct of emotionally intelligent leadership. Emotionally intelligent leadership is defined as a leadership ability to manage emotions, use emotions when thinking, and relate to the emotions of others (Mayer et al., 2000). Emotional intelligence can be viewed as a leadership trait (Northouse, 2019), or as a leadership behavior or skill that can be learned (Shankman et al, 2015). I determined that emotionally intelligent leadership be included in my Sport Club student leadership development model based on its importance to team leadership and based on its validated instrument for students engaged in the

process of leadership inclusive of ILI and SRLS leadership behaviors and skills, performed with emotional intelligence in the process.

**Skill Based Theories of Leadership.** Contemporary leadership theories conceptualized leadership as a skill to be developed; rather than prior leadership theories, which held that leadership was either an inherent trait or a set of behaviors. The Skill Theory of Leadership holds that leaders learn skills of leadership (Northouse, 2019). As one example of a leadership skills measure, the Skills Inventory (Northouse, 2019) was developed as a self-scored self-assessment scale that was intended by Northouse (2019) for self-improvement. The Skills Inventory was not validated as an instrument, and it included a set of skills without any factor structure claim.

In contrast to the unvalidated Skills Inventory, the MSL (2021) is an example of a validated instrument measuring leadership capacity in terms of the Social Change Model of Leadership (Higher Education Research Institute [HERI], 1996). The MSL attempted to measure leadership through evaluation of a core construct: socially responsible leadership that promotes social change. The SRLS served as the primary scale within the MSL and measured social change through evaluation of socially responsible leadership. Operationally, social change is accomplished when leaders align their individual values with group values and social community values in order to accomplish change (HERI, 1996). Conceptually, students developed and aligned values to various degrees based on student pre-college characteristics, student environmental factors, and student characteristics after exposure to the collegiate environment (Dugan, 2006a, 2006b). MSL findings have compared means and correlations between aspects of college student involvement and leadership development on Social Change theoretical and SRLS constructs. Other instruments within leadership skill scholarship addressed affective skills, such as emotion.

Emotional intelligence is a human skill. The Emotionally Intelligent Leadership (EIL) scale is a validated instrument that has measured *emotional intelligence* (Mayer et al., 2000) as a leadership construct. Schulze and Roberts (2005), Gardner and Stough (2002), Lopes et al. (2005), Rosete and Ciarrochi (2005), Wolff et al. (2002), and Wong and Law (2002) found that emotional intelligence correlated with leadership effectiveness. Hermes et al. (2011) argued that “evidence does suggest that EI helps us better understand leadership emergence... behaviors...and leader effectiveness” (p. 55). That emotional intelligence correlated with leadership effectiveness suggested potential for inclusion in my model of Sport Club leadership development.

### ***Assessment of Leadership Theory***

Critics have argued that leadership trait theory was deficient because of its narrow sampling basis (Northouse, 2019). Additionally, leadership trait theory has been critiqued for the use of self-reported or observational research methods of leadership trait theory studies (Northouse, 2019; Stogdill, 1948). Despite critiques of initial trait theory sampling and observational methodology, leadership trait theorists continued to factor analyze initial systems in order to further refine early models. For example, Rammstedt and John (2007) developed a 10-item short form of the Big Five Factor instrument. The Big Five Factor 10-item instrument maintained 70% of the Big Five Factor 44-item instrument’s variance, 85% of the Big Five Factor 44-item instrument’s reliability and nearly all of the Big Five Factor 44-item instrument’s discriminant and structural validity (Rammstedt & John, 2007). In order to increase the Big Five Factor 10-item instrument part-whole and retest correlations with the Big Five Factor 44-item instrument, Rammstedt and John (2007) recommended the inclusion of a third Agreeableness scale item. Due to noted limitations of the Big Five Factor 10-item instrument relative to the Big

Five Factor 44-item instrument, Rammstedt and John (2007) argued that use of the Big Five Factor 10-item instrument must be reserved for situations when “participant time is truly limited” (p. 210). Scholars who performed further dimension reduction of early leadership trait instruments achieved an important goal: to create leadership scales that did not overburden respondents by sheer number of survey items—allowing for higher response rates and more robust leadership survey research. I believe the contribution of leadership trait theorists to my own research are evident in the dimension reduction efforts I undertook in my own methodology. I discuss the connection of trait theorists to my own research later in Chapter 2.

Besides the factor analysis techniques of trait theory, I draw attention to the instrument validation methodology found in leadership behavior theories. Stillwell et al. (2016) created and validated the Change Leader Behavior Inventory. The Change Leader Behavior Inventory is based on a five-factor model of change leadership. The factors included communication, planning, involving, doing, and sustaining. The Change Leader Behavior Inventory purposed to measure “leader behaviors that may affect the outcomes of change efforts” (Stilwell et al., 2016, p. 374). It is a self-reported instrument containing 37 items. The 37 items address the five-factor model, which includes sub-factors within the main five factors. The Change Leader Behavior Inventory contributed to transformational leadership literature by providing a validated instrument to measure behaviors related to change leadership and change management. I appreciated that the scale validation contributed to leadership theory by measuring the effects of theory on a measurable outcome—in this case, a Change Leader Behavior theory was found to impact change leadership and management outcomes. The connection of leadership theory to outcomes in behavioral leadership research exceeded to some degree the practical applications of

leadership trait research. Leadership skills theory seemed, to me, easier to measure than traits and behaviors.

***Summary of Research***

Leadership instruments across trait, behavior and skill-based approaches are presented in Table 2 in a summation of the literature. Alignment between leadership approaches and leadership instruments mirrored my earlier assessment of leadership theory; namely, validated instruments exist for trait, skills and behavior theories as a result of incremental analysis of early research.

**Table 2**

*Constructs Found in the Literature on Trait, Skill, and Behavior Leadership Theories*

Theory	Instruments
Trait	Leadership Trait Questionnaire Big Five Factor 44-item instrument Big Five Factor 10-item instrument
Skills	Socially Responsible Leadership Scale Emotionally Intelligent Leadership
Behavior	Leadership Behavior Questionnaire Leader Behavior Inventory Leadership Practices Inventory Student Leadership Practices Inventory Change Leader Behavior Inventory Identity Leadership Inventory

Trait based leadership theories evolved from a laundry list of observed behaviors into a factored system of key traits. The dimension reduction achieved through quantitative analysis provided a roadmap for leadership scale development and validation of factor structures in later leadership theories.

Behavior based leadership theories and corresponding behavior inventories and questionnaires introduced an important element to leadership assessment: the addition of subordinate/peer ratings to the self-ratings and observational research methodologies prevalent in early leadership trait scholarship. Leadership behavior assessment and methodology enabled researchers to probe frequency of leadership behavior on a continuum—an important methodological advance from early leadership trait research, which only measured the presence or absence of observable traits.

In addition to the methodological changes that accompanied topical shifts in the research, from trait leadership approaches to behavioral leadership approaches, the leadership theory literature also evolved in terms of inclusion of affective domains of leadership skills. Skill based approaches to leadership embraced leadership as a learnable skill, rendering leadership theory available to U.S. higher education as an achievable learning outcome. Indeed, today U.S. higher education professional associations have consolidated resources and expertise to ensure that leadership development of college students is enhanced and measured for efficacy of leadership programs. Early trait-based leadership theorists would not have viewed such leadership development as possible or knowable.

### ***Relation of Leadership Theory to Proposed Sport Club Leadership Construct and Scale***

Due to research findings that skill-based leadership outcomes such as emotional intelligence are correlated with leadership effectiveness, I included both the EIL and the SRLS scale in my conceptual model of Sport Club leadership development. I also conceived the Identity Leadership Inventory (ILI) as integral leadership behaviors utilized by Sport Club student leaders as they create team identities and shape team expectations for all individual members.

## **Sport Club Research**

### ***Major Elements of the Research***

This section of the literature review described foundational student involvement literature before focused on student development literature specifically studying the Sport Club population. While student development is a diverse field of educational research undergirded by psychology and sociology disciplines, student involvement theory (Astin, 1984) is an area of educational research focused on growth in students' capabilities as a result of participation in higher education (Rodgers, 1990). Student involvement theory directly addressed theoretical and conceptual elements of leadership development through positional leadership of Sport Club teams; in other words, student involvement theory considers the ways in which direct engagement by students with their environment interacted with student developmental outcomes. Sport Club student research (Haines & Fortman, 2008; Hall-Yannessa et al., 2008) incorporated student involvement theory in analysis of the specific population of Sport Club student leaders and Sport Club members. Sport Club student research may therefore be viewed as the application of student involvement theory to a specific student involvement experience, that of Sport Club participation and leadership. Student involvement theory provided workable and operational definitions of involvement that may be readily applied to Sport Club student research.

Student involvement theory defined *involvement* as “the amount of physical and psychological energy that the student devotes to the academic experience” (Astin, 1984, p. 297). Berger and Milem (1999) argued that involvement is a behavioral construct. As a behavioral construct, student involvement may be measured in terms of time spent in involvement experiences, for example, the number of hours a student performs in a student chorus. Student involvement research has attempted to demonstrate the quality and efficacy of involvement

experiences in terms of student behavioral outcomes or long-term outcomes like retention rates (Tight, 2019). Other outcomes found in the literature included collaborative leadership (Lower-Hoppe et al., 2020), delegation skills (Hall-Yannessa et al., 2008), and soft skills like time management (Haines & Fortman, 2008). Astin (1991) developed an I-E-O College Impact Model to visualize theoretical inputs, environment and outcomes related to student involvement experiences.

The I-E-O College Impact Model (Astin, 1991) is composed of inputs, an environment and outcomes. Inputs may be demographic factors and prior behaviors, skills and metrics related to students, such as the inputs considered by Norwani et al. (2009). Environmental factors may be either academic or social environments, but environmental factors are always contextualized within an educational environment, such as Chinese schools sampled by the China College Student Survey (Jinghuan S. et al., 2014). Academic achievement may be evaluative measures of student success, including short-term outcomes such as the acquisition of knowledge, skills, and competencies or long-term outcomes such as persistence and retention, as in York et al. (2015).

Strayhorn (2018) portrayed Astin's I-E-O College Impact Model as easily described, depicted, and operationalized. Simplicity was a key strength of the I-E-O College Impact Model. I benefitted from the clear visualization of environmental factors as mediating influences which may have correlated with student outcomes compared to student inputs. Strayhorn's appraisal of the I-E-O College Impact Model's parsimony factored into my use of Astin's (1991) model relative to other potential student involvement models I could have adopted.

Seminal student involvement theory included heuristics and models developed by Tinto (1975) for drop-out decisions, Meece et al. (1988) for student engagement in academics, Kahn (1990) for student employment experiences, and Kuh et al. (2007) for assessment of learning

from involvement, in addition to Astin's (1984) work. Subsequent researchers developed conceptual maps and factor structures for student involvement, such as a three-concept map partitioning student involvement or engagement progressing along three tracks: behavioral, emotional and cognitive (Fredricks et al., 2004). A meta-analysis performed by Bond et al. (2020) found disagreement in the research about student engagement and involvement factor structures. For example, Järvelä et al. (2015) argued that the construct *interaction* belongs to behavioral, emotional and cognitive dimensions, rather than only belonging to the behavioral dimension. Other researchers argued that constructs belong in one dimension rather than another, such as Lawson and Lawson's (2013) critique of *effort* and *persistence* constructs traditional place in the behavioral dimension, rather than the cognitive dimension, of student engagement or involvement. Yet other research described student engagement or involvement theory as a multifaceted and complex construct with several dimensions and constructs arrayed in a complex web of relationships (Appleton et al., 2008; Ben-Eliyahu et al., 2018). Finally, some researchers refused to delineate student engagement or involvement dimensions or factors of constructs, and instead argued that student engagement and involvement theory was altogether a *metaconstruct* (Fredricks et al., 2004; Kahu, 2013).

In light of such disagreements over student engagement and involvement definitions, Boekaerts (2016) recommended that educational researchers define student engagement and/or student involvement for their own research projects in the researcher's own words. As Solomonides (2013) concluded, no one definition of student involvement will satisfy all stakeholders. And as Kahu (2013) noted, an educational research project may not account for all possible student engagement or student involvement constructs and sub-constructs found in the literature. Indeed, my contextual model of Sport Club student leadership development argued

that every student involvement experience was unique in its developmental opportunities, supports and challenges for particular involvement outcomes. Based upon the literature in the field, my definition of Sport Club student involvement is presented as follows:

Sport Club student involvement is the energy and effort that students exert within their team, observable via any number of behavioral, cognitive or affective indicators across a continuum. It is influenced by a range of contextual factors, including individual, organizational and institutional constructs. The more Sport Club student leaders invest in their experience in terms of weekly practice hours, yearly events, and annual team dues, the more likely they are to apply leadership behaviors and skills fitted to the leaders' place in a high complexity leadership role.

My definition of Sport Club student involvement nested leadership in the contextual factors which may have influenced the leaders' selection and expression of particular leadership paradigms fitted to a range of leadership environments that range from simple to complex.

Although my definition of student involvement was based on Astin (1984), my definition defined other student involvement theories and described why they will not be the basis of my definition.

I considered several student engagement and involvement theories besides the Astin (1984) I-E-O Model. First, I examined a student involvement model from Tinto (1975). Next, I moved from the Tinto model to an employment-based model developed by Meece et al. (1988) to find a sample of a student involvement theory applied to a discrete form of student involvement. Last, I studied an outcomes-based framework developed by Kuh (2001) to determine necessary elements of a student involvement model that included outcomes of student involvement in a measurable way. Having synthesized the extant student involvement theory, my study included ample theoretical basis to engage in the process of selecting leadership scales as a

desired outcome for inclusion in my analysis. Results of my student involvement literature review are presented with specific notes about my application of the literature to my study.

### ***Application of Student Involvement Theories to Sport Club Research***

Kuh (2001) studied the degree to which learning outcomes associated with the Astin (1984) I-E-O College Impact Model were measured by the National Survey of Student Engagement. Kuh (2001) analyzed psychometric properties of the National Survey of Student Engagement in order to validate the instrument's self-reported data. He described challenges related to self-reported data, including the reporting of time estimates. The National Survey of Student Engagement data were self-reported by students, rather than collected by observation of diaries and logs, which Kuh (2001) argued would have been more valid measures of student time on tasks than were student self-report time estimates. I adopted five conditions necessary for self-reported data to be valid, according to Kuh (2001):

1. Requested information must be known to the respondents.
2. Questions must be clearly written.
3. Questions must refer to recent activities.
4. The questions must elicit a serious and thoughtful response.
5. The questions must not harm or embarrass the respondent.

A meta-analysis of conditions for self-reported data validation across studies by several researchers (Bradburn & Sudman, 1991; Brandt, 1958; Converse & Presser, 1986; DeNisi & Shaw, 1977; Hansford & Hattie, 1982; Laing et al., 1988; Lowman & Williams, 1987; Pace et al., 1985; Pike, 1995) served as the basis for Kuh's (2001) postulated conditions for self-reported data validity. Self-reported data validity was important to my study because it employed a cross-sectional research design that relied on students to be "accurate, credible reporters" (Kuh, 2001,

p. 4) of their experiences and outcomes of their experiences in Sport Club student involvement. Measures of self-reported data from students about their experience encountered unique challenges to reliability measures such as stability, according to the Kuh (2001) meta-analysis of data validation studies on the student experience. I noted that the same research that indicated stability challenges in the literature ultimately reported evidence of validity and reliability for the National Survey of Student Engagement self-reported data through a three-factor model that accounted for 57% of variance using a principal component analysis (Kuh, 2001). It appeared that analysis of variance was necessary to validate existing instruments measuring outcomes of student experiences.

I embraced Kuh's (2001) research recommendations for outcomes from student involvement—the five conditions necessary for self-reported data to be valid, coupled with attention to proposed instrument validity and reliability with analysis of variance. The literature (Kuh, 2001) provided a blueprint for the validation and reliability of self-reported student involvement data. The use of validated scales or instruments in my survey assisted item development from a validity and reliability analysis standpoint.

In conclusion of my synthesis of foundational student involvement theories, I used the Astin (1984) I-E-O College Impact Model because the model was an efficient and simple way to conceptualize factors that may influence the development of leadership outcomes for Sport Clubs student leaders based on the leaders' involvement experiences. I developed a roadmap to learning outcomes assessment of student involvement experiences using student self-reported data (Kuh, 2001). My literature review explored existing literature on student involvement and outcomes of involvement for the Sport Club leader and member population.

### *Assessment of Sport Club Research*

Researchers have associated Sport Club student involvement in positional leadership roles with several key student development outcomes (Pascarella & Terenzini, 1991). For example, research shows that student involvement in Sport Clubs is associated with academic success (Dugan et al., 2014; Lifschutz, 2019) and persistence (Forrester, 2014). Matthews (1987) conceptualized the student-leadership basis of Sport Clubs as a catalyst for the practice of leadership in action, characterized by other researchers as a laboratory for learning (Downs, 2003; Mull et al., 1997). Subsequent research attempted to measure the leadership gains for students involved in Sport Club positional leadership roles.

**Leadership as a Skill Inventory.** Leadership may be evaluated as a five-factor skill model using the Student Leadership Skills Inventory (M. Crowder, personal communication, June 24, 1998). The five factors included personal skills, communication skills, group process/group management skills, goal setting and attainment skills, and technical skills. The Student Leadership Skills Inventory included 50 items addressing self-reported leadership skills. Crowder (M. Crowder, personal communication, June 24, 1998) found that the factor structure was unstable across the 24 higher education institutions at which it was administered. Despite the instability of the structure across institutions, the instrument's reported reliability appeared adequate (.94 using Cronbach's alpha; M. Crowder, personal communication, June 24, 1998). Instability in the instrument reliability was noted; the Cronbach's alpha score was as low as .67 across the different data sets when tested independently (M. Crowder, personal communication, June 24, 1998). The integrated Student Leadership Skills Inventory data sets appeared to be a reliable leadership instrument for some post-secondary student populations, with noted instability across campuses and within the instrumentation items. My study benefitted from

gathering Sport Club leadership skill outcomes identified in the research (M. Crowder, personal communication, June 24, 1998; Hall-Yannessa & Forrester, 2005) to inform my selection of leadership skills from a sort of inventory of Sport Club leadership skills.

**Leadership as a Skill Inventory for Sport Club Student Leaders.** Building on M. Crowder's (personal communication, June 24, 1998) work, Hall-Yannessa and Forrester (2005) administered the Student Leadership Skills Inventory to Sport Club student leaders before and after one year as positional leaders of Sport Clubs. The pre-test, post-test process was repeated with another generation of participants in a second year to reach 128 pre-test surveys and 94 post-test surveys from two generations of respondents across 2 academic years. Hall-Yannessa and Forrester (2005) described their sampling strategy as a cluster sampling strategy. They employed two-way ANOVA to analyze the pre-test and post-test scores relative to which positional leadership role was reported by participants. Participants served as Sport Club presidents, treasurers, and secretaries. Hall-Yannessa and Forrester (2005) found that in some cases Sport Club student leaders reported lower post-test self-ratings than pre-test ratings. Figure 5 shows the top five leadership skill gains and bottom five leadership skill gains reported by Hall-Yannessa and Forrester (2005, p. 12).

## Figure 5

### *Top Five and Bottom Five Reported Post-Test Averages for Student Leadership Skills*

Leadership Skill	M	SD
I respect the rights of others	5.50	0.70
I am sensitive toward people who are different from me	5.43	0.70
I understand the consequences of my actions	5.41	0.74
I relate well to the opposite gender in a work-type situation	5.40	0.78
I can identify my personal values	5.40	0.75

Leadership Skill	M	SD
I am competent in public speaking	4.86	1.12
I am competent in delegating tasks to others	4.89	1.00
I am competent in giving constructive criticism to others	4.91	0.98
I am competent in promoting/marketing events	4.95	0.97
I am competent in stress management	4.95	1.17

*Note.* From “Impact of advisor interaction on the development of leadership skills in club sports’ officers” by S. Hall-Yannessa and S. Forrester, 2005, *Recreational Sports Journal*, 29(1), 9–21 (<https://doi.org/10.1123/rsj.29.1.9>).

Hall-Yannessa and Forrester (2005) found that Sport Clubs student leaders self-reported higher leadership skill scores in areas related to understanding of self and others. Although Hall-Yannessa and Forrester (2005) used the Student Leadership Skills Inventory, they noted limitations to their study. The study sampled participants from one institution. Analysis of the Student Leadership Skills Inventory factor structure failed to produce a stable structure. Given the lack of generalizability due to the single campus case study sampling methodology and noted failure to factor structure the Student Leadership Skills Inventory, Hall-Yannessa and Forrester (2005) recommended future research to make multivariate analysis possible. Multivariate analysis of variance is preferable to univariate analyses, according to research by Tabachnik and

Fidell (2007). A new instrument comprised of multiple leadership dimensions derived from multi-campus sampling was needed.

Future research should be directed towards properly developing a scale, with multiple leadership dimensions that can be factor-analyzed in order to address this limitation.

Researchers might also be interested in examining the effect that different club sports structures have in reported leadership skills. (Hall-Yannessa & Forrester, 2005, p. 18)

Review of the leadership skill literature (Hall-Yannessa & Forrester, 2005; Tabachnik & Fidell, 2007) influenced the design of my study in significant ways. First, my problem statement explored the contextual factors that influence Sport Club leadership development, in response to Hall-Yannessa and Forrester's (2005) call for future research into Sport Club student leadership skill factor structures. Second, I employed methodology related to exploratory factor analysis and multiple regression that analyzed variance on a model with some degree of parsimony. Last, I expanded on sampling recommendations from the literature by sampling participants across several institutions across the United States.

**Sport Club Leadership Outcomes Study.** Other Sport Club leadership research contributed to the field by studying the outcomes of student involvement (Haines & Fortman, 2008) in Sport Clubs as a particular population whose student involvement context needed to be explored (Astin, 1991). Haines and Fortman (2008) critiqued several studies that examined single associations between Campus Recreation participation and a series of associated outcomes. For example, intramural sports involvement was positively associated with values clarification (Rothwell & Theodore, 2006); Campus Recreation participation was reported to be associated with long-term health (Forrester et al., 2006); and Campus Recreation employment correlated with academic success Hackett (2007). Although the correlational research connected

aspects of Campus Recreation participation with desired outcomes of student involvement, the research did not address Sport Club participants.

One study (Haines & Fortman, 2008) sampled Sport Club participants from three populations: Washington State University Sport Club members ( $n = 148$ ), Ohio State University Sport Club members ( $n = 190$ ), and NIRSA Volleyball Championship Sport Club participants ( $n = 616$ ). Sampling in the study was convenience sampling methodology. Study methodology developed an ad-hoc survey including 41 items (Haines & Fortman, 2008). The 41 items were developed using a post-hoc only proxy 10-point Likert scale that used then and now responses. The study protocol analyzed responses using paired  $t$ -test. Findings included reported significant differences in all items and reported Sport Club participant gains in the following items: Travel Planning Skills, Sense of Belonging, Time Management, School Pride, and Overall Leadership Development (Haines & Fortman, 2008).

Despite the statistically significant findings reported by Haines and Fortman (2008), the researchers noted limitations to their study which require caution in interpreting the findings. Principally, the ad-hoc survey (Haines & Fortman, 2008) has not been validated. Additionally, the proxy pre/posttest research design raised validity concerns that were not addressed by the researchers. The study limitations informed my study by highlighting the importance of using validated instruments for outcomes assessment among Sport Club student leaders. I identified and used validated instruments for measuring Sport Club student leaders' leadership capacity. In conclusion, the intersection of student involvement theory and Sport Club leadership research described the extent to which Sport Club student leaders involved themselves in their Sport Clubs based on time and quality of time invested in the Sport Club teams. One study (Haines & Fortman, 2008) identified Sport Club participation as a significant form of student involvement

which merited future research into Sport Club leadership outcomes.

### **Differentiation of Sport Club Leadership Outcomes From Other Programs'**

**Leadership Outcomes.** Sport Club participants reported higher self-reported perceived outcome benefits than did students who participated in group fitness programs and intramural sports (Lower et al., 2013). Sport Club participants benefited from Campus Recreation participation to a greater degree than other aspects of Campus Recreation programming. In short, not all Campus Recreation programs benefit participants equally. My study hypothesized that Sport Club involvement is a discrete form of involvement differentiated from other aspects of Campus Recreation involvement in terms of both contextual influences and outcomes of involvement. I found support (Lower et al., 2013) in this literature review for my study to treat Sport Club involvement as uniquely influential on leadership development among Sport Club student leaders.

While this literature review found Sport Club contextual influences to be associated with leadership development, this literature review also probed the degree to which quality as well as quantity of student involvement (Astin, 1984) influenced Sport Club leadership development. Sport Club leadership research (Lower et al., 2013) hypothesized that conceptual factors differentiated Sport Club student involvement from other forms of student involvement.

Club sports meet more frequently than the other recreation sports and thus, more, and better, relationships among members are formed, thereby leading to higher social benefits. Club sports are student driven and rely on students to develop management and communication skills leading to increased intellectual benefits. (p. 236)

In summary, Sport Club leadership research (Lower et al., 2013) reported the significance of contextual factors which were influential on student involvement (Astin, 1984) benefits

realization in the form of leadership development. I identified a need for future research to list and factor analyze influential factors related to Sport Club leadership attainment. I therefore listed contextual factors and explored their predictiveness on a factor structure relative to desired leadership target variables. Finding a simple factor structure was important to create an instrument with stability to measure leadership as a long-term outcome.

### **Sport Club Participation and Academic Success as a Long-Term Outcome.**

Outcomes may be studied in both an immediate and long-term dimension. I found a study (Kampf & Teske, 2013) that explored the effects of Sport Club participation on academic success. The academic success study reported that Sport Club participation was positively associated with student success; and in particular, with retention and persistence (Kampf & Teske, 2013). The study isolated Sport Club benefits relative to those from other student involvement forms, having reported that “even after controlling for other variables that can impact retention, such as high school grade point average, students who participated in club sports were more than twice as likely to enroll at the university the following year than nonparticipants” (Vasold et al., 2019, p. 57). My review of the Kampf and Teske study (2013) affirmed for me the value of data disaggregation. I controlled for demographic variables and confounding variables insofar as I could in my study’s conceptual model, so that my study could attempt to analyze variance due to Sport Club participation with individual variables entered into a regression model as control variables. Additionally, my study included a number of demographic variables related to the individual, organization and institution in its examination of Sport Club student leadership development and Sport Club contextual factors.

**Sport Club Participation as a Predictor of Academic Success.** In addition to critiquing the contribution of retention and persistence research (Kampf & Teske, 2013) to the Sport Club

literature, Vasold et al. (2019) performed secondary analysis on survey data from the American College Health Association National College Health Assessment (ACHA/NCHA) surveys from Fall 2008, Fall 2009, Spring 2009, and Fall 2010 administrations. The ACHA/NCHA survey cast a wide net over several student behaviors and outcomes, but the Sport Club research study (Vasold et al., 2019) narrowly examined the ACHA/NCHA *exposure variable* of participation in Sport Clubs, Intramural Sports, or both. The study described its *outcome variable* as a cumulative grade point average at the time of the ACHA/NCHA survey administration. Analysis of covariates in the research design were based on findings from the literature, ranging from race (DesJardins et al., 2002; Reason, 2009; Zheng et al., 2002) and gender (DesJardins et al., 2002; Reason, 2003; Zheng et al., 2002); to work hours per week for pay (Dundes & Marx, 2006); stress level (Pritchard & Wilson, 2003); and university type (public/private; Lower et al., 2013) Last, the study simplified all covariates into dichotomous variables for purpose of statistical analysis and performed multinomial logistic regression (Vasold et al., 2019). Results showed that Sport Club participants showed the strongest relationship between sport involvement and cumulative grade point average. Based on the findings, Vasold et al. (2019) speculated about the contextual factors which may have imparted greater academic success opportunities for Sport Club students than students who participated only in Intramural Sports or no sports.

Previous research suggests some reasons as to why this might occur including the following: being on a more consistent and cohesive team, the added responsibility and leadership skills needed, required minimum [grade point averages], need for greater time management skills, a higher level of competition, more vigorous [physical activity], and the role of coaches in club sports. (Lower et al., 2013, p. 61).

In discussion, Vasold et al. (2019) reported that contextual factors specific to Sport Clubs

enabled greater academic success than did Intramural Sports or no sports participation. The contextual factors specific to Sport Clubs appeared related to participation in competition beyond the participants' own campus, as well as to organization of team dues, budgets and expenditures related to team travel.

Limitations of the study included “differences in group sizes between participants and nonparticipants” (Vasold et al., 2019, p. 63) and an inability to analyze frequency of participation due to the existing ACHA/NCHA survey items. Vasold et al. (2019) recommended that future research analyze frequency and longevity of participation in Sport Club programs. My study gathered information related to frequency and longevity of Sport Club participation in terms of number of annual events and number of hours per week of practices—a decision drawn from the Sport Club literature related to participation as a predictor of academic success and other outcomes. My literature review next explored other desired outcomes and their association to Sport Club contextual influences.

**Sport Club Participation as a Catalyst for Belonging.** Other Sport Club research examined belonging through satisfaction surveys. Lifschutz (2019) studied Sport Club participants at a single institution using a self-developed 25 item instrument measuring Sport Club participant satisfaction with self-reported outcomes of their experience using a 1-5 Likert scale. The survey was administered in 2010, 2015, and 2019; the successive administration of the surveys to multiple cohorts of students was described as a longitudinal study (Lifschutz, 2019). I noted that a longitudinal study would track one sample of participants over time.

Nevertheless, the study performed factor analysis and uncovered the following three latent factors: *belonging*, *satisfaction* and *outcomes*. The factors were used in linear regression analysis twice. The first regression used *satisfaction* and *belonging* as independent variables on a

target variable of *overall satisfaction*. The second regression used *belonging, satisfaction* and *overall experience* as independent variables on a target variable of an *outcomes scale*.

Through discussion of findings, Lifschutz (2019) argued that explanatory variables contextual to the Sport Club involvement experience must be studied to determine their influence on student development outcomes related to leadership and other desired outcomes. Although Lifschutz (2019) later noted limitations to his study, I applied his call to action for further research into underlying variables in the Sport Club student development environment.

In critiquing the study, I noted that the research design was not adequately justified by conceptual or literature review foundations. Specifically, the self-made survey items were not connected to theoretical constructs or prior findings in Sport Club literature. Second, I noted that the two regressions may not have been the most viable statistical analysis of the described factor structure and research questions. A factor analysis or other exploratory analytic may have addressed the research questions and research interest. Apart from my critique, Lifschutz (2019) noted limitations to his study. The primary limitation that Lifschutz (2019) critiqued in their study was its design as a case study of a single campus as a limitation for generalizability. Also, the study placed a confidence interval of 6.75% due to inadequate sample size.

The research design itself lacked a validated scale in its methodology. The study recommended that future research utilize validated scales to measure desired outcomes, particularly for the purpose of identifying underlying variables potentially latent in the Sport Club context. I valued this study for its contribution to my thinking about contextual factors that may support or challenge student development outcome attainment, as well as for its future research recommendation of using validated instruments in outcomes assessment.

**Sport Club Participation as a Catalyst of Member Attachment.** Some Sport Club

research included validated instrumentation in its research (Lower-Hoppe et al., 2020). One study examined the association between Sport Club participation and *member attachment* to the Sport Club and to the university. The researchers employed convenience sampling by physically attending Sport Club practices and meetings to recruit 180 participants for the study. The sample was surveyed by a 20-item adaptation of the Benson and Eys (2017) Team Socialization Tactics Questionnaire to measure the use of inclusionary tactics employed by Sport Club members, as well as the University Attachment Scale developed by France et al. (2010) to measure member attachment. The use of two validated survey instruments built on the recommendation of prior Sport Club research literature (Lifschutz, 2019), though the study examined outcomes of Sport Club participation separate from those of my study. The study contributed to mine most significantly in its methodological decision-making, in that it provided a quality example of factor analysis applied to Sport Club research in a way that furthers the Sport Club literature beyond correlational research.

Factor analysis with Eigenvalues greater than 1 were used on inclusionary tactics use. Specific findings included the following: respondents reported higher university attachment than member attachment, respondents whose Sport Clubs differentially applied inclusionary tactics reported higher member and university attachment, and respondents reported that Sport Club competition and Sport Club travel were insignificant aspects of member attachment (Lower-Hoppe et al., 2020). The use of sport club travel and competition frequencies as variables in a factor analysis seemed to follow calls for Sport Club research that was not merely correlational; however, the study did not examine target variables other than member attachment.

In critique and summary, the Lower-Hoppe et al. study (2020) noted limitations to their research: the use of convenience sampling; the exclusion of some Sport Club variables including

practice hours, postseason play, meeting hours; the singular focus on new members in its sampling. Future research was recommended to use broader random sampling strategies and to address Sport Club variables excluded from their study, over time in longitudinal research. I adopted some of the Sport Club variables recommended for future research by Lower-Hoppe et al. (2020) in the evaluation of Sport Club student involvement and leadership development.

**Sport Club Leadership Measured by the SRLS.** Correia-Harker and Hall (2019) studied leadership development in Campus Recreation. Correia-Harker and Hall (2019) situated their study as one in a “burgeoning field of leadership” (p. 4) traced back to Astin (1991) and continued through the Multi-Institutional Study of Leadership (MSL) leadership instrument based on a theoretical framework devised by Komives et al. (2011). Correia-Harker and Hall (2019) listed several possible campus experiences that were studied to determine their impact on student leadership development (Dugan et al., 2014). Correia-Harker and Hall (2019) explained their research purpose as an effort to study several forms of student involvement and leadership development. The MSL instrument enabled studies on fraternity and sorority life (Shalka & Jones, 2010); alternative spring break (Skendall, 2012); and residence life (Early, 2014). Using the MSL, Correia-Harker and Hall (2019) examined leadership as an outcome of campus recreation activities. While some Sport Club research probed the ways in which campus recreation supported student leadership development (Dugan et al., 2014; McFadden & Stenta, 2015), Correia-Harker and Hall (2019) used the validated MSL instrument to measure leadership of Sport Club student leaders as compared to leadership of other student involvement types. The validated MSL instrument merited attention in this literature review and ultimately was selected in this study’s methodology.

The MSL and has been administered to more than 600,000 student respondents, making

the data ample in scope (Correia-Harker & Hall, 2019). In addition to its robust dataset, the MSL benefits from its conceptual framework, which is based on the Social Change Model of Leadership (HERI, 1996). The MSL relies on the SRLS developed by Tyree (1998) and adapted by Dugan (2006a, 2006b). Indeed, Dugan (2015) also created a reduced item count scale and further tested reliability in cross-sectional research across a few campuses. Given the MSL dataset and its conceptual framework, Correia-Harker and Hall (2019) defined leadership according to the Social Change Model (HERI, 1996). Practitioners will benefit from an understanding of the Social Change Model as it is the basis of the SRLS, a scale of my study's methodology.

The Social Change Model of leadership embraced *citizenship* as the key foundation of leadership and described leadership growth as the alignment of individual values with group values to create positive social change (HERI, 1996). The MSL instrument measured nine constructs related to *citizenship* as leadership: leadership capacity, leadership self-efficacy, leadership motivation, complex cognitive skills, social-perspective taking, resilience, socio-cultural conversations, social change behaviors and a belonging climate (Correia-Harker & Hall, 2019).

These nine MSL leadership constructs were synthesized from prior research and operationalized as follows. First, *Leadership Capacity* was defined as a combination of skill, attitude and knowledge related to leadership effectiveness. The MSL Leadership Capacity construct therefore measured capacity in terms of citizenship, a distinctive conceptual framework to define leadership. Second, *Leadership Self-Efficacy* was defined by work from Bandura (1997), which characterized self-efficacy in leadership as an internal belief in the ability to lead. Third, *Leadership Motivation* was defined as a precursor construct necessary for leadership

development to occur as a result of persistent investment of effort in the act of leadership (Chan & Drasgow, 2001). Fourth, *Complex Cognitive Skills* were defined as meaning making ability when navigating real world issues by using higher order thinking on leadership (Chan & Drasgow, 2001; Dugan, 2017). Fifth, *Social Perspective Taking* was defined by work from Gehlbach (2004) as an ability to see the world through another person's perspective, thoughts, and feelings. Sixth, *Resilience* was defined by work from Luthans et al. (2007) as something necessary to maintain hope in leadership roles. Seventh, *Socio-cultural Conversations* were described as being integral to leadership development, according to Dugan and Komives (2007, 2010) and Dugan et al. (2014). Eighth, *Social Change Behaviors* were described as being closely related to socially responsible leadership (Johnson, 2015). Last, *Belonging Climate* was noted by the impact that a belonging climate has on leadership motivation (Dugan, 2017).

Having defined the MSL leadership constructs, a working knowledge of its elements will aid in the MSL findings interpretation. The study performed secondary analysis of 2015 MSL data (Correia-Harker & Hall, 2019). The 2015 MSL dataset included 98,657 respondents from the national cross-sectional sampling methodology (Correia-Harker & Hall, 2019). Notably 81.6% of respondents had participated in at least one form of Campus Recreation programming. Reported findings were twofold for Sport Clubs and leadership. First, Sport Club participation significantly positively correlated with leadership self-efficacy, sense of belonging, socio-cultural conversation and social change behaviors; however, Sport Club participation significantly negatively correlated all other items.

I noted that Sport Club participation significantly correlated negatively with leadership capacity as defined by the MSL in terms of the Social Change Model. I would have assumed that Sport Club participation in leadership experiences would have correlated positively with a

leadership capacity instrument. The leadership capacity negative association doesn't match my conceptual model of Sport Club leadership development. Based on this literature review, my study theorized that Sport Club participation—particularly in positional leadership experiences—correlated positively with leadership development.

Additionally, Correia-Harker and Hall (2019) found that “when compared with their peers, sports club participants show lower levels of several leadership outcomes, specifically with leadership capacity (and most of the [social change model of leadership] values within)” (p. 26). The study recommended that future research explore “why there are such differences between various forms of recreation” (p. 27) and other forms of student involvement. The study hypothesized that Sport Club contextual factors influence leadership expression among Sport Club student leaders: “sports clubs are often focused on competition” and “this reinforces ‘us versus them’ mentalities that may not be consistent with [social change model of leadership] values, and thus, may not be conducive for developing cooperative leadership” (Correia-Harker & Hall, p. 27). Based on the MSL findings, my study determined to synthesize all Sport Club research when crafting a definition of leadership for Sport Club students that would include and expand beyond the Social Change Model of leadership. My study also benefitted from a synthesis of the literature and its recommendations for future research, namely recommendations to develop a multifaceted leadership instrument which used validated instrumentation. My literature review appeared completed after analysis of the MSL study (Correia-Harker & Hall, 2019).

### ***Summary of Research***

A synthesis of Sport Club student development is presented below in Table 3 before a leadership section. Sport Club student development literature has called for a multidimensional

leadership instrument that addresses Sport Club contextual factors which may influence leadership development among Sport Club participants differentially compared to other Campus Recreation and campus student involvement experiences. The Sport Club student development literature applied the Social Change Model of Leadership as a leadership theory with which to evaluate Sport Club student leadership development; however, the literature noted that other leadership theories may better fit the Sport Club student involvement experience. In summary, Sport Club student development literature suggests further research into leadership context.

Table 3 presents Sport Club leadership literature in a summative manner. Its synthesized elements include four headings: author(s), sampling and methodology, findings and recommendations for future research. The table describes sampling in terms of the study's method, as well as methodology in terms of the study's primary statistical tests. Findings are succinctly presented in terms of leadership outcomes related to Sport Club participation. Recommendations for future research are presented last and with sufficient text to convey a roadmap for future research into leadership development among Sport Club student leaders. My study addressed the recommendations for future research within the context of the literature's findings and methodologies.

The literature review informed my study methodology in several ways. First, I sampled a national population of Sport Club student leaders. Second, my methodology included factor analysis necessary in instrument development. Third, I performed regression to explore the hypothesis that Sport Club contextual factors may be predictive of Sport Club leadership expression and development. Finally, I included validated scales in my proposed Sport Club Leadership instrument.

**Table 3***A Synthesis of Sport Club Student Development Literature Sampling, Methodology, Findings, and Recommendations*

<b>Author(s)</b>	<b>Sampling/Methodology</b>	<b>Findings</b>	<b>Recommendations for Future Research</b>
M. Crowder (personal communication, June 24, 1998)	Random sampling, confirmatory factor analysis and ANOVA.	5 factor model	Recommended factor structure validation of Student Leadership Skills Inventory scale.
Hall-Yanessa & Forrester (2005)	Cluster sampling and two-way ANOVA.	Student Leadership Skills Inventory yielded top and bottom 5 outcomes.	Recommended a multi-dimensional leadership scale.
Haines & Fortman (2008)	Convenience sampling and post-hoc proxy Likert.	<i>t</i> -test found gains in overall leadership.	Recommended use of a validated leadership instrument.
Lower et al. (2013)	Convenience sample and correlation and ANOVA	Mean comparison found Sport Clubs reported higher benefits than other programs.	Hypothesized about influential factors impacting Sport Club outcomes.
Kampf & Teske (2013)	Targeted sampling and Chi Square and regression.	Sport Club participation was positively associated with retention.	Noted the single campus sample limited generalizability.
Vasold et al. (2019)	National dataset and regression.	Sport Club contextual factors positively associated with academic success.	Noted influential Sport Club contextual factors may be studied by frequency.
Lifschutz (2019)	Convenience sampling and regression.	Reported that belonging was associated with Sport Club participation outcomes.	Recommended a validated scale to study Sport Club variables on outcomes.
Lower-Hoppe et al. (2020)	Convenience sampling and MANOVA.	Sport Club use of inclusionary tactics correlated with higher member attachment.	Recommended broader sampling and analysis of Sport Club variables including time in practices, and so forth.
Correia-Harker & Hall (2019)	National cross-sectional sampling and correlation.	Sport Club participation was negatively associated with leadership capacity and other constructs.	Recommended exploration of apparent differential leadership outcomes for Sport Club participants compared to other Campus Recreation programs; hypothesized Sport Club participation is discrete context.

*Note.* ANOVA is a one-way analysis of variance; MANOVA is a multivariate analysis of variance.

### ***Relation of Sport Club Research to a Proposed Sport Club Leadership Construct and Scale***

Sport Club research is significant to my conceptual framework in that the literature of Sport Club research connects leadership with student involvement in the particular setting of Sport Club leadership involvement experiences among college students. I surmised from the Sport Club research that Sport Club student leaders developed leadership capacity and efficacy in a way that was unique to Sport Club student leaders.

Hall-Yannessa and Forrester (2005) recommended that future researchers create a multidimensional scale of leadership fitted to the Sport Club student leadership context because Hall-Yannessa and Forrester considered Sport Club leadership a discrete context from other forms of leadership in which college students engage. Lower et al. (2013) also recognized that the discrete leadership context of Sport Club student leaders necessitated an assessment of Sport Club leadership outcomes among college student Sport Club leaders. Notably, Lower et al. postulated that influential factors may impact Sport Club leadership outcomes. Kampf and Teske (2013) studied Sport Club leadership outcomes in a single campus study design and noted that future researchers should attempt to sample a larger, multi-campus sample of the Sport Club student leaders population.

Other Sport Club research findings augment leadership theory in my contextual model by adding a richness of data analysis techniques. For example, Vasoldet al. (2019) noted that influential Sport Club contextual factors may be studied by frequency, in order to determine if leadership outcomes depended on depth of participation in the leadership experiences. Although I could have created a new Sport Club leadership scale to account for leadership outcomes and participation frequency, I found the recommendations of Lifschutz (2019) to be helpful: a validated scale could be used to study Sport Club variables on leadership outcomes. Finally, I

found that recent research by Correia-Harker and Hall (2019) reinforced my understanding of the Sport Club research literature. Correia-Harker and Hall (2019) recommended the exploration of apparent differential leadership outcomes for Sport Club participants compared to other Campus Recreation programs; and Correia-Harker and Hall hypothesized Sport Club participation is discrete context. I am excited to synthesize the Sport Club research and leadership theory literatures into a Sport Club leadership scale that seeks to explore, delineate and measure a Sport Club leadership construct.

### **Conceptual Framework**

I believe that Sport Club student leaders pursue change based on their own values; and, that Sport Club student leaders implement their change agenda through the modicum of identity-based leadership, using emotional intelligence as a primer for achieving their goals as a student leader of a Sport Club team.

### **Figure 6**

*A Sport Club Leadership Model Including the EIL, ILI and SRLS leadership Scales*



*Note.* EIL is Emotionally Intelligent Leadership instrument, ILI is Identity Leadership Inventory, and SRLS is Socially Responsible Leadership.

Conceptually, Sport Club student leaders exercise varying degrees of emotional intelligence as they navigate success and failure in competition. While personally navigating individual and team successes and failures, Sport Club student leaders must also shepherd the emotions and coping of their teammates—often without the presence of a coach or university official. The key to successfully managing their own emotions, and those of their peers, is proficiency in the leadership theory construct of emotional intelligence as measured by the EIL.

While emotional intelligence is the first leadership theory and leadership skill described in my conceptual framework, emotional intelligence is not the only leadership construct important to Sport Club leadership. Sport Club student leaders must make emotional intelligence—self-awareness, teamwork, sacrifice for others’ benefit, and so forth—a team goal towards which every team member is mobilized. The act of making certain desirable Sport Club member traits part of a shared team identity is defined in my conceptual framework as identity-based leadership as measured by the ILI.

Last, while I believe that Sport Club student leaders must first manage their own emotions in relation to others before engaging in identity-based leadership practices, I also believe that a final ingredient is necessary for Sport Club leadership to be successful: socially responsible leadership. Socially responsible leadership can be defined as the process by which leaders act on their own values toward positive change, as measured by the SRLS.

## **Conclusion**

In conclusion, my conceptual framework’s three leadership constructs—EIL, ILI and SRLS—represented the leadership ability of Sport Club student leaders to manage emotions as part of a team identity while pursuing a positive change within their team, directed at a positive goal. My conceptual framework was built upon both leadership theory and student development

theory found in Sport Club research. My conceptual framework was composed of three leadership constructs researchers have developed and validated instruments. My conceptual framework empowered my research design through the generation of numeric data that can be quantitatively analyzed, to explore a factor structure and in order to determine which elements of the three leadership constructs and leadership scales matter most to Sport Club leadership. Chapter 3 outlines methodology and considerations about this study and its protocols.

## **CHAPTER 3**

### **METHODS**

I used a non-experimental quantitative research design consisting of a cross-sectional survey that was administered to a sample at one point in time. Quantitative research employs statistical procedures to identify variables and relate them to one another and to the study's research questions for the purpose of testing theories and explanations (Creswell & Creswell, 2018).

#### **Research Questions**

I explored the following research questions.

1. To what extent do the items in the ELI, ILI, and SRLS co-vary to form a coherent leadership construct?
2. To what extent do individual, organizational and institutional variables explain variance in Sport Club leadership scores?

#### **Research Design**

I analyzed contextual variables that may influence Sport Club student leadership development. I combined several extant measures to develop an instrument that measured Sport Club student leadership as a multidimensional construct. The literature showed that student involvement in Sport Club positional leadership roles differentially impacted leadership outcome scores, relative to other types of student involvement in Campus Recreation programs. My new leadership instrument for Sport Club student leaders incorporated recommendations for future research found in my literature review. Specifically, my leadership instrument for Sport Club

student leaders combines the Emotionally Intelligent Leadership (ELI), Identity Leadership Inventory (ILI), and the Multi-institutional Study of Leadership (MSL) Socially Responsible Leadership Scale (SRLS) into a new leadership instrument.

I evaluated my multidimensional leadership instrument in terms of reliability (Helms et al., 2006) and validity (Hoyt et al., 2006) while conducting an exploratory factor analysis of the target leadership variables. I used exploratory factor analyses results to inform a stepwise regression model. The process of creating a multidimensional leadership instrument comprised of the ELI, ILI and SRLS scales is a type of scale development.

### ***Scale Development***

Scale development is an important facet of quantitative research methods (Dawis, 1987). My literature review findings included suggestions for future research to utilize validated scales to develop a multidimensional instrument that measures Sport Club student leadership development. To develop an instrument using validated scales, I used eight scale development guidelines outlined by DeVellis (2003, 2017).

1. Construct Definition
2. Generating an Item Pool
3. Determine the Format of for Measurement
4. Have Initial Item Pool Reviewed by Experts
5. Consider Inclusion of Validation Items
6. Administer Items to a Sample
7. Evaluate the Items
8. Optimize Scale Length

DeVellis' eight scale development guidelines were used because the guidelines were found to be appropriate for research designs that employed factor analysis (Worthington & Whittaker, 2006). Anastasi (1988), Dawis (1987), and DeVellis (2003) also recommended use of the eight scale development guidelines for research "prior to using factor-analytic techniques" (Worthington & Whittaker, 2006, p. 811).

**Construct Definition.** According to DeVellis (2017), the first step of scale development is to define the construct being measured. I defined Sport Club student leadership development as a model in which Sport Club individual, organizational and institutional contextual variables influence the development of Sport Club leadership as a composite target variable which included three constructs: the ELI, ILI, and SRLS scales. The theory and literature base of my Sport Club leadership development model provided a sound basis from which to develop scales and instrumentation.

**Generating an Item Pool.** The second step of scale development is to generate a pool of items from which to select for inclusion in an instrument (DeVellis, 2017). I selected three constructs for inclusion in my target variable of leadership outcomes: the ELI, ILI, and SLRS scales. I also selected several variables for inclusion in my predictor variables, which I hypothesized to be individual, organizational, and institutional contextual variables of Sport Club student involvement. To reduce demand on survey respondents, I created my own short forms of the validated ELI and ILI scales with the full SRLS scale due to licensing agreements and also based on their factor loadings in research on the ELI, ILI, and SRLS scales. I performed exploratory factor analysis to further screen ELI, ILI, and SRLS variables for inclusion in my regression model. After all, according to Worthington and Whittaker (2006), item inclusion holds one objective: "to arrive at a set of items that clearly represent the construct of interest so

that factor-analytic, data-reduction techniques yield a stable set of underlying factors that accurately reflect the construct” (p. 813).

***Determine the Format for Measurement.*** According to DeVellis (2017), the third step of scale development is to determine the formatting and delivery of items. I defined Sport Club Sport Club individual, organizational and institutional contextual variables in clear terms that Sport Club student leaders easily understood. I also designed Sport Club individual, organizational and institutional contextual variable items in a manner that enabled timely response from study participants. For example, I wrote items in such a way that a simple numeric response was required to answer the item. A potential item appeared as *How many average hours per week did your Sport Club practice in Fall 2018 – Spring 2019?*

***Initial Item Pool Reviewed by Experts.*** According to DeVellis (2017), the fourth step of scale development is to ask a panel of experts to review all included items for clarity and conciseness. I submitted all items to my dissertation committee for review, in accordance with DeVellis’ (2017) recommendation.

***Consider Inclusion of Validation Items.*** According to DeVellis (2017), the fifth step of scale development is to consider the inclusion of a validation scale or validation items to assist in construct and content validity evaluation of a new instrument. After consideration, I did not include a validation scale or validation items, because my research design included exploratory factor analysis to establish an initial factor structure of the ELI, ILI, and SRLS (Worthington & Whittaker, 2006). Secondly, I did not include a validation scale or validation items because the addition of such items may have made respondents less likely to complete my survey (Converse & Presser, 1986).

**Administer Items to a Sample.** The sixth step of scale development is to administer items to a sample before administering a whole instrument to a whole population sample (DeVellis, 2017). I used my dissertation committee feedback on my survey items instead of administering the already validated scale items to a sample.

**Evaluate the Items.** The seventh step of DeVellis' (2017), scale development model is to evaluate the included items. I performed an exploratory factor analysis (EFA) of the ELI, ILI, and SRLS target variables before screening variables for inclusion in a regression model. My purpose in conducting EFA before regression was to determine a simple factor structure. "Regardless of how effectively the researcher believes item generation has reproduced the theorized latent variables, we believe that the initial validation of an instrument should involve empirically appraising the underlying factor structure [i.e., EFA]" (Worthington & Whittaker, 2006, p. 815).

**Optimize the Scale Length.** The eighth and final step of DeVellis' (2017) scale development is to optimize the length of the scale for respondents. I created short forms of some of my selected and included scales when possible based on my examination of the validated scales' factor loadings and reliability scores (Bandura, 2006) based on studies of the validated scales. I included the highest loaded items in my short forms of the EIL and ILI scales.

## **Hypotheses**

Several hypotheses were tested to address the study's research questions. Hypotheses are outlined below.

### ***Hypothesis 1***

**Coherence of Sport Club Leadership Scales.** I believe that Sport Club leaders engage in identity-based leadership practices while also applying emotional intelligence to the process of

identity-building toward desirable team goals pursued using socially responsible leadership skills. Due to my belief that the ELI, ILI, and SRLS scales are all practiced by Sport Club student leaders in an integrated leadership effort, I hypothesized that the ELI, ILI, and SRLS leadership scales formed a single coherent leadership dependent variable. The single coherent leadership dependent variable retained all three leadership scales after EFA.

### ***Hypothesis 2***

**Influence of Sport Club Involvement.** Based on my experience advising Sport Club student leaders, I believe that student leaders experience diminishing returns on leadership growth as student leaders invest their time up to and beyond a point at which the student leaders experience role strain relative to their other responsibilities as students. I did not know how many practice hours per week may be the proposed point of diminishing returns. Therefore, I hypothesized that Sport Club student leaders' outcome scores positively correlated with student involvement practice hours per week, until a point, after which Sport Club student leaders' outcome scores negatively correlated with student involvement hours per week—a curvilinear correlation. I used a spline regression (Royston & Sauerbrei, 2009) to test my hypothesis of a non-linear function that changes along the predictor, using SPSS as follows:

If the knots are fixed by the analyst, then splines can be fitted quite easily with the SPSS REGRESSION procedure... If the knots are to be estimated from the data... fit many such models with the SPSS NLR and CNLR procedures... Nonlinear Regression and Constrained Nonlinear Regression, respectively. (International Business Machines, 2020, para. 2)

A regression spline may be made with knots at quartiles, according to Serrano (2020). I chose to apply knots at quartiles if a curvilinear function were found.

**Figure 7**

*A Sample Regression Spline With Knots at Ages 25, 50 And 75*



*Note.* Adapted from *Spline regression with estimated knots in SPSS*, by International Business Machines, 2020 (<https://www.ibm.com/support/pages/spline-regression-estimated-knots-spss>). IBM.

### **Participants and Note on COVID-19 Disruption Between Participation and Response**

My study used purposeful criterion sampling. The sample of participants for this study included the whole population of Sport Club student leaders at four-year public higher education member institutions of NIRSA (formerly the National Intramural Recreational Sports Association) in the Fall 2021 semester, meaning the participants were surveyed approximately two years after the participation due to COVID-19 disruption. Specifically, the target population consisted of positional leaders commonly named in Sport Club constitutions: Sport Club Presidents, Sport Club Vice Presidents, Sport Club Treasurers, and Sport Club Secretaries. Inclusion criteria included full-time undergraduate, constitutionally elected, current, and active

Sport Club officers. These individuals were the targeted population because they were presently experiencing Sport Club contextual influences identified as variables in this study. The contact information for this target population was accessible through Sport Club Program Directors.

My target population included 126 higher education institutions that hold membership in NIRSA. I assumed that participants at member higher education institutions participated on Sport Club teams that varied by reporting structure, with sport clubs reporting to either Athletics departments or Student Affairs divisions. I assumed that participants at member higher education institutions participated in Sport Club teams that varied by funding, with some Sport Clubs receiving funding from their sponsoring department, some from student assembly, some from a mix of sponsoring department and student assembly, or some from member dues and alumni giving only.

I performed an a priori calculation of a desirable minimum sample size, followed by a post hoc analysis of effect size based on my known sample on each statistical test from the research design. In the a priori calculation, I used Boomsma's (1982) general recommendation that  $N$  should be at least 100, and desirably closer to 200, to have a greater probability of finding a proper solution. In the post-hoc sample effect size analysis, the known sample size was tested for sampling adequacy for an EFA and stepwise regression using SPSS. In summary, my minimum  $N$  was a 5:1 subject to item ratio and my actual  $N$  of 326 total responses and 163 completed responses, was amended to be adequate by a revision to the dissertation proposal memo.

## **Data Sources**

In this study, I explored Sport Club student leaders' contextual influences on leadership outcomes.

### ***Sports Club Leadership Outcomes***

Leadership outcomes included three scales: ELI, ILI, and SRLS scales—a total of 61 items. The three scales addressed multiple leadership constructs to produce a multidimensional leadership instrument. My study also included 11 items comprised of individual, organizational and institutional Sport Club contextual variables. In total, the survey included 72 items.

**Emotionally Intelligent Leadership for Students: Inventory 2.0 (EILS:I 2.0)** The EIL instrument was comprised of 57 items measuring 19 constructs on a 1-7 response scale ranging from *never* to *always*. There were three items per subscale. The 19 constructs were grouped into the three categories as follows. *Consciousness of self* included: were Emotional Self-Perception, Emotional Self-Control, Authenticity, Healthy Self-Esteem, Flexibility, Optimism, Initiative, Achievement. *Consciousness of others* included Displaying Empathy, Inspiring Others, Coaching Others, Capitalizing on Difference, Developing Relationships, Building Teams, Demonstrating Citizenship, Managing Conflict, and Facilitating Change. *Consciousness of context* included: Analyzing the Group, and Assessing the Environment.

Miguel and Allen (2016) conducted a series of studies validating the EILS:I 2.0. In one study of 443 college students from higher education institutions in the United States, Miguel and Allen administered a survey with three items per scale, a subset of the original scale, and performed an EFA that evaluated the factor structure of the EILS:I 2.0 instrument. The sample ( $N = 443$ ) consisted of 62% Females, 35% Males, and 2.6% not reporting. And 78% of the sample held positional leadership roles at the time of the survey. Data collection occurred in 2012. Miguel and Allen sent the survey to purposefully selected leadership faculty across the United States and asked that the leadership faculty disseminate the survey to their leadership programs' students.

Next, Miguel and Allen (2016) performed descriptive statistical analyses and removed all but “the three strongest items per scale based on the scale reliabilities and item content...the reliabilities for the scales ranged between .80 and .93” (p. 19). EFA identified two problematic factors in the original instrument draft that were removed from the instrument, which resulted in the final 19 construct instrument. Finally, Miguel and Allen performed a confirmatory factor analysis to test three models for goodness of fit, including a one-dimensional model, a three dimensions model of the three consciousness categories, and the 19 capacity model. The 19-capacity model was supported (CFI = .94 and SRMR = .05; TLI = .93). All factor loadings were significant to the .001 level, although Miguel and Allen reported that four items failed to meet a desired .70 cutoff. In this current study, I adapted the 57-item EILS:I 2.0 into a 19-item short form based on the highest factor loading item per construct to create a 19-item scale.

### ***ILI***

A research team that included Steffens et al. (2014) developed and validated an ILI that explored the ways leaders build a shared social identity through the leadership skills of *social identity management* across four competencies: *identity prototypicality*, *advancement*, *entrepreneurship*, and *impresarioship* (which is the act of performing an identity). The research team described the four competencies as a leader “Being one of us,” “Doing it for us,” “Crafting a sense of us,” and “Making us matter” (Steffens et al., 2014, p. 1003, fig. 1).

The ILI items were developed and refined based on ratings from a sample of 275 participants who volunteered to participate in the study in an exploratory study. The participants read descriptions of the four ILI constructs and rated the 20 ILI items on a 1-7 response scale, from *not at all representative* to *completely representative*. The participants rated the proposed items on their representativeness of all four constructs in order for the research team to

reorganize items under the constructs. The research team performed multiple ANOVAs to determine relative fit of items to the four constructs. Second, the researchers performed t-tests on the fitted items and their highest matched construct to find statistical significance. Third, one-way *F* tests resulted in significance across all 20 items ( $p = .001, n = 20$ ). The study established content validity of the ILI scale and enabled subsequent studies to proceed to confirm construct validity, as well as discriminant and criterion validity, resulting in a 15-item ILI.

In this current study, I adapted the 15-item ILI into an 8-item short form based on the two highest factor loading items per construct to create an 8-item scale.

I included the ILI because I conceptualized the act of building a sense of *us* and *we* among a Sport Club team is a primary responsibility of a Sport Club student leader. In addition, it was a reasonably valid and reliable instrument that explored a multidimensional social identity construct as a leadership identity construct. The implications of a social identity scale for leadership bore great interest for an exploration of Sport Club student leaders of teams.

### ***MSL SRLS***

The MSL instrument included several scales developed to measure socially responsible leadership. The MSL included 68 items from the Tyree (1998) 103-item SRLS. The SRLS item response format was a 1-5 Likert scale ranging from *strongly disagree* to *strongly agree*. The SRLS items proved reliable ( $\alpha$  ranged from .83 to .76 across factors). In addition, the MSL added a Leadership Efficacy scale based on Bandura (1997). The Leadership Efficacy scale response format was a 1-4 response scale from “not at all confident” to “very confident”. The scale demonstrated strong reliability ( $\alpha = .88$ ). Last, the MSL also included Inkelas et al.’s (2008) scales that measured *cognitive development*, *appreciation for diversity*, and *leadership identity*

*development* constructs. The MSL included 14 demographic items and 23 pre-college demographic variables which describe K-12 student involvements and characteristics.

The MSL was tested using a sample of 50,378 students across higher education institutions in the United States. The sample enabled robust analysis and precluded Type II bias or other challenges to validity of effect sizes. The MSL reported that it over-represented full-time students and females. The MSL also noted that class standing was evenly distributed in the sample. The validity of the MSL items and the robust sample size enabled this study to utilize the SRLS with confidence.

In this current study, I used the entire 34-item SRLS, due to a licensing agreement with the MSL. I used a 1-5 response scale from *Strongly Disagree* to *Strongly Agree* for the 34 items.

### ***Individual Variables***

**Sport Club Student Leaders' Demographics: Race, Sex, and Year.** I included three demographic items consisting of participant race, sex, and class year. Demographic variables included in the analysis demonstrated value as control variables, for use in a stepwise regression model.

### ***Institutional Variables***

I developed a set of items to explore Sport Club student leaders' quantity and quality of involvement (Astin, 1984) in the Sport Club context and according to Sport Club contextual variables found in the literature to be not yet addressed by prior research. The three items defined as Sport Club institutional variables included the presence or absence of a paid coach, the reporting structure to either Athletics or Student Affairs, and the university allocated budget standardized as a Z score. The Sport Club contextual variables were not assigned norms or a grading scale.

### ***Organizational Variables***

**Annual per Person Member Dues.** The annual per person member dues variable was included because I conceptualized the student investment in their experience as one aspect of *competition quantity* and *involvement quantity* according to Astin (1984). The analysis of annual per person member transferred raw responses to Z scores. This data source was not validated and was not tested for reliability. This data source was novel in student leadership studies, and I observed differences in investment.

**Annual Sport Club Operating Budget.** Annual sport club operating budget was included because I conceptualized the institutional investment in the Sport Club student experience as one aspect of *competition quantity* and *involvement quantity* according to Astin (1984). Annual sport club operating budget transferred raw responses to Z scores. This data source was not validated and was not tested for reliability. This data source was novel in student leadership studies with wide ranges reported.

**Involvement Quantity.** Average number of practice hours per week was included as the primary aspect of *involvement quantity* for my study (Astin, 1984). It is possible for Sport Clubs to practice at differential levels based on the nature of their sport and the facility resources available to the Sport Club teams. Data analysis of this variable transferred raw responses to Z scores. This data source was not validated and was not tested for reliability. This data source and analysis was novel in student leadership studies and wide ranges in quantity were reported.

**Competition Quantity.** Number of annual competitions was included as the primary aspect of *Competition Quantity* for my study (Astin, 1984). Sport Club teams competed at varying frequencies. Data analysis of this variable transferred raw responses to Z scores. This

data source was not validated and was not tested for reliability. This data source and analysis was novel in student leadership studies.

**Table 4**

*Survey Protocol Design Matrix*

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<b>Areas on Survey</b>	<b>Items</b>
Individual and Institutional Variables	1-6
Organizational Variables	7-11
Identity Leadership Inventory (ILI)	12-19
Emotionally Intelligent Leadership (EIL)	20-38
MSL Socially Responsible Leadership Scale (SLRS)	39-72

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*Note.* MSL = Multi Institutional Study of Leadership.

## **Data Collection**

I administered a Qualtrics survey electronically through NIRSA member institutions' Sport Club Program Directors. The Sport Club Program Directors forwarded my email invitation to participate in my survey to all of their current Sport Club leaders. The survey used incentive in the form of a drawing to win three \$50 Amazon gift cards if survey respondents submitted their email in a follow-up to the Qualtrics survey, which sent respondents an autoreply upon submission informing the respondents of the opportunity to provide an email address for the drawing. The survey did not employ unique links per respondent. See the survey draft in Appendix A, human subjects approval in Appendix B, student email invitation in Appendix C, administrator email invitation in Appendix D, and informed consent in Appendix E. Last, I shared W&M Institutional Review Board approval with the institutions.

## **Data Analysis**

I employed a quantitative data analysis strategy that applied multivariate analysis. First, I performed an EFA to determine factor loadings and explanation of variance for the leadership variables (the ELI, ILI and SRLS) to determine if the three variables formed a coherent leadership construct. Second, I performed a stepwise regression based on the relationships discovered in the EFA. My regression model also addressed the hypothesis of a curvilinear relationship between student involvement quantity and leadership outcome score.

### ***Research Question 1***

To answer the question “To what extent do the items in the ELI, ILI, and SLRS co-vary to form a coherent leadership construct?”, I performed an EFA that determined the number of factors using Eigenvalues greater than 1 with scree plot and with conceptual coherence. I performed extraction by principal axis factoring with iterated communalities (i.e., least squares

method), and derived factor loadings with the assumption that the factors were correlated, using Varimax rotation. Snook and Gorsuch (1989) recommended against principal component analysis with small sample sizes because the procedure may result in poor loadings based on the sample size.

The purpose of exploratory factor analysis is to study the structure of multivariate data (Tucker & MacCallum, 1997). My theory that the ELI, ILI, and SRLS formed a coherent leadership construct for Sport Club student leaders was predicated on a factor analysis principle: that underlying constructs and dynamics give rise to observed phenomena, and that factor analysis methodology may reveal constructs from the data. Specifically, factor analysis posits that *internal attributes* that cannot be directly measured may be found through the measurement of the effect of the internal attributes on measures of *surface attributes* (Tucker & MacCallum, 1997). Internal attributes were thereafter referred to as factors or latent variables.

Factor analysis is further defined by the two types of factors that may be found: *common factors* and *specific factors* (Tucker & MacCallum, 1997). Common factors affect multiple measured variables, while specific factors influence only one measured variable (Tucker & MacCallum, 1997). EFA allows for specific factors, while confirmatory factor analysis does not; therefore, I allowed for the inclusion of specific factors in my exploratory factor analysis. Uncovering an underlying factor structure in my data was the primary function of my exploratory factor analysis.

The uncovering of an underlying factor structure in my data was achieved through a second function of my exploratory factor analysis. Data reduction is a process by which parsimony is achieved through the exclusion of variables and scale items unrelated to the EFA model of latent factors found in the observed data. For example, the EIL, ILI and SRLS variables

contained 61 items. My EFA removed items from the EIL, ILI and SRLS variables based upon exploratory factor analysis data reduction techniques.

***Research Question 2***

To answer the question “To what extent do individual, organizational and institutional variables explain variance in Sport Club leadership scores?”, I developed an EFA factor structure based on my EFA of the target leadership variables. With my EFA factor structure, I performed stepwise regression on all variables as well as curvilinear multiple regression or spline regression on the variables which demonstrated diminishing returns according to my conceptual modeling of student Competition Quantity and student Competition Quantity. See Table 5 for a summary of my research questions, data sources, and analysis.

**Table 5**

*Alignment of Research Questions With Data Sources and Data Analysis*

<b>Research Question</b>	<b>Data Sources</b>	<b>Data Analysis</b>
To what extent do the items in the EIL, ILI, and SRLS co-vary to form a coherent leadership construct?	Individual Variables Organizational Variables Institutional Variables EIL ILI SRLS	EFA Reliability Analysis
To what extent do individual, organizational and institutional variables explain variance in Sport Club leadership scores?	EFA Factor Structure Individual Variables Organizational Variables Institutional Variables EIL ILI SRLS	Stepwise Regression Curvilinear Multiple Regression Examine Factors and Regression Weights

*Note.* EIL = Emotionally Intelligent Leadership instrument; ILI = Identity Leadership Inventory; SRLS = Socially Responsible Leadership Scale; EFA = exploratory factor analysis.

## **Delimitations, Limitations, Assumptions**

### ***Delimitations***

Delimitations of this study included decisions about which leadership scales to include and which items and factors from those leadership scales to include in the multidimensional leadership instrument. I purposefully selected validated instruments on leadership skills, as well as variables of Sport Club student leader, organization, and institution characteristics. The application of a post-positivist research paradigm accounted for the potential limitations of the survey methodology by delimiting the research claims made in data analysis and discussion in Chapters 4 and 5. Worthington and Whittaker (2006) found that EFA followed by confirmatory factor analysis (CFA) was the most commonly used methodology in their meta-analysis of scale development research in counselor psychology. The use of EFA followed by CFA was recommended instead of CFA only or structural equation modeling only research designs, for initial scale development. I applied an exploratory factor analysis followed by regression to determine an initial factor structure as well as to find which variables affected my target variables. My delimitation provided recommendations for future research in terms of the need for future CFA studies of my EFA results.

### ***Limitations***

Limitations of the study included timing of the survey administration during the COVID-19 pandemic, limitations of the sampling response rate and participant composition, and finally limitations of unvalidated instruments where no validated scale existed for a given variable. Limitations of the COVID-19 pandemic affected self-reported Competition Quantity due to restrictions on Sport Club participation in the 2019-2020 academic year. Limitations of the COVID-19 pandemic may have also affected self-reported Sport Club student leader scores on

all scales due to limited opportunities for Sport Club student leaders to practice leadership during restricted activity.

Limitations of the sampling response rate may have included issues of sample representativeness to full time undergraduate students in higher education institutions in the United States. Participant profiles and effect size analysis may have been required to account for potential sampling response rate issues. Limitations of unvalidated variables used in this study may have represented opportunities for future research in the areas of leadership trait models, in particular. Trait theory and scales were not used in this study. The lack of validation and reliability of my individual, organizational and institutional variables may have affected the study.

### ***Assumptions***

This study assumed that Sport Club student leaders participated in a form of student involvement that was discrete from previously studied forms of student involvement. This study thus also assumed that Sport Club student leaders' contextual influences may have significantly influenced Sport Club student leaders' leadership behavior and skill development. In summary, this study applied a post-positivist research paradigm that placed an emphasis on contextualizing Sport Club student leaders in their environment when exploring their leadership according to a set of validated leadership scales. Findings and results were assumed to demonstrate new data on leadership among students who participated in Sport Club positional leadership roles.

### **Researcher as Instrument Statement**

I was a Sport Club Assistant Director at William & Mary and exercised care to administer this study using a Qualtrics online survey through NIRSA member institution Sport Club Administrators. I explained here my positionality as a researcher. I advised all Sport Clubs

at W&M and served in such a role since 2017. In addition to advising all Sport Club student leaders, I supervised their home events personally and through my student staff. I did not determine who was allowed or not allowed to serve positional leadership roles on Sport Clubs. In fact, Sport Club constitutions determined elections processes for those leadership roles. My role at W&M shaped my beliefs about leadership development among Sport Club leaders.

I believed that Sport Clubs were valuable experiential learning vehicles for student leadership development. I valued the work that Sport Club student leaders invested in their own teams and in their student involvement experience. I held an interest in demonstrating the unique ways in which the Sport Club student involvement experience influenced leadership development among Sport Club student leaders.

### **Ethical Considerations**

I submitted a request to the William & Mary Education Institutional Review Committee (EDIRC) prior to conducting any data collection for this research study. My request included a participant informed consent form, and I kept participants in my study confidential. I kept the data in Qualtrics and a W&M Box file and disposed of individual responses and individual data upon defense of the dissertation. I submitted W&M Institutional Review Board approval to institutions included in my sample.

In the next chapter, results are presented with interpretation of findings. Careful attention to the procedural decision-making of my data analysis were presented to the reader for careful interpretation of the findings.

## CHAPTER 4

### RESULTS

The purpose of this study was to explore the degree to which three leadership scales co-varied, and the degree to which the scales formed a coherent leadership construct. A second purpose of this study was to address the question: do variables unique to Sport Club student leaders explain variance across Sport Club student leadership scores? To meet the purposes of this study, I administered an online survey to a population of Sport Club student leaders in the U.S. in the summer and early fall of 2021 during a time when many schools had modified operations under pandemic conditions.

#### **Sample Failed to Meet Protocol of the Dissertation Proposal**

My dissertation protocol established a target of 250 completed survey responses to proceed with data analysis. Data collection closed with 326 total responses, including 163 completed survey responses. Therefore, my study sample did not achieve the target defined by its protocol.

The dissertation committee granted me permission to proceed with caution under a revised dissertation proposal memo. Under the revised dissertation proposal memo, this study presents data with appropriate academic humility and with rigorous criteria for post-hoc analysis of sampling adequacy, allowing for additional study results to be interpreted with caution.

#### **Additional Results of the Study**

I present with caution results and findings of my analyses performed in pursuit of my two research questions. First, I present the research questions and planned analyses for them. Second,

I describe my sample with descriptive statistics and analyze my sample for appropriateness of my planned analyses. Third, I display the results of my analyses and my process for having reached them. Last, I make a summative report of my research questions, results and findings in closure of Chapter 4 and in preparation for further discussion in Chapter 5.

Three analyses were performed on the data. First, I used Pearson's correlation to compare means across the Identity Leadership Inventory (ILI), Emotionally Intelligent Leadership (EIL) and Socially Responsible Leadership Scale (SRLS) scales to determine if they are co-varied. Second, I performed an exploratory factor analysis (EFA) to search for latent factors which explained variance in the data. The EFA determined a number of factors using Eigenvalues greater than 1 with Scree plot and with conceptual coherence. Extraction by principal axis factoring with appropriate rotation was performed.

Additionally, I developed an EFA simple factor structure based on my EFA of the target leadership variables. Finally, I performed stepwise regression on one dependent variable (an omnibus leadership score comprising all ILI, EIL and SRLS items with multiple independent variables (Sport Club variables)). These planned analyses preceded data collection from my sample.

### **Description of my Sample**

A total of 126 universities were sampled. The sample included at least one university from every state in the U.S. Although all sampled universities were non-profit, the sample varied by control type and included both public and private four-year institutions, across a professional listing from the National Intramural Recreational Sports Association (NIRSA). The complete list is presented in the appendices; and, that list included the institutional contact whom I requested to share my survey with their Sport Club student leaders. See Table 6 for a description of the

sample by Carnegie Classification. According to Table 6, my sample included more public than private institutions.

**Table 6**

*Carnegie Classification Control of the Sample of Undergraduate FTE*

Institution Type	Institutions Sampled	Survey Institutions
	<i>n</i>	Sampled (vs. IPEDS) %
Private	31	25 (67)
Public	95	75 (33)
<b>Total</b>	<b>126</b>	<b>100</b>

*Note.* FTE = full-time enrolled undergraduate student. The Carnegie Classifications were collected from Indiana University (2021); national enrollment data was collected from International Postsecondary Education Data System (IPEDS, 2021).

The sample of universities included both public and private institutions across the U.S. with varying control type and size as presented in Table 7. The sample included many large institutions, some medium institutions, and a few small institutions. Next, survey response descriptive statistics are presented.

**Table 7**

*Carnegie Classification Size of the Sample of Undergraduate FTE*

Size	Institutions Sampled	Survey Institutions
	<i>n</i>	Sampled %
Small (1,000-2,999 students)	5	4
Medium (3,000-9,999 students)	31	25
Large (10,000+ students)	90	71
<b>Total</b>	<b>126</b>	<b>100</b>

*Note.* FTE = full-time enrolled undergraduate student. The Carnegie Classifications were collected from Indiana University (2021)

From the 126 universities sampled, a total of 326 responses were submitted. Of the 326 responses, 163 were completed responses. See Table 8 for descriptive statistics related to respondents. The respondent data portrayed a picture of the Sport Club student leaders who completed the survey, in terms of individual demographics. Individual demographic information collected included self-reported Race/Ethnicity, whether their Sport Club had a coach and whether their Sport Club reported to Student Affairs, Athletics or an Other office. Most respondents in the sample were White (81%) members of Women’s Sport Clubs (41%) that reported to Athletics (43%) and that operated without a coach (85%).

**Table 8**

*NCAA Sport Classification of Respondents of Undergraduate FTE by Self-reported Gender*

<b>Classification</b>	<b>Respondents</b>	<b>Survey</b>
	<b><i>n</i></b>	<b>Respondents (vs. IPEDS)</b>
		<b>%</b>
Men’s	65	21 (42.5)
Women’s	126	41 (57.5)
Co-Recreational	118	38 (n/a)
<b>Total</b>	<b>309</b>	<b>100</b>

*Note.* FTE = full-time enrolled undergraduate student. The national enrollment data were collected from International Postsecondary Education Data System (IPEDS, 2021)

**Table 9***Race/Ethnicity of Respondents of Undergraduate FTE*

Race/Ethnicity	Respondents	Survey
	Respondents (vs. IPEDS)	
	<i>n</i>	%
White	249	81 (49)
Black or African American	13	4 (12)
Asian	18	6 (6)
Prefer not to Say	7	2 (0)
Other	22	7 (33)
<b>Total</b>	<b>309</b>	<b>100</b>

*Note.* FTE = full-time enrolled undergraduate student. The national enrollment data were collected from International Postsecondary Education Data System (IPEDS, 2021)

The survey respondents formed a sample of the U.S. Sport Club student leader population.

### **Description of my Variables**

The following description of my variables includes both the process by which I developed them and the statistical means by which I evaluated the variables for significance and conceptual importance. Variables were continuous, ordinal or categorical. Continuous variables were standardized by Z score. Ordinal variables from Likert responses were computed into fractions, and then percentages, and then treated as ordinal continuous variables. Categorical variables were computed using dummy variables for purposes of regression modeling, as in the Presence of Absence of a Paid Coach variable.

### ***Presence or Absence of a Paid Coach***

Presence or absence of a paid coach was defined as a binary yes or no response and was coded as a *Yes* for present and *No* for absent. I left to the survey respondent to determine if they felt they had a paid coach; for example, if a Sport Club paid its coach by way of cash

reimbursements for gas and the Sport Club student leader respondent felt that they paid their coach, that response was not judged by any other variable or evaluation. I treated the self-reported data at face value in all future cases across variables. Table 10 summarizes the self-reported presence or absence of a paid coach by descriptive statistics of the sample, including type of Sport Club and reporting structure of Sport Club.

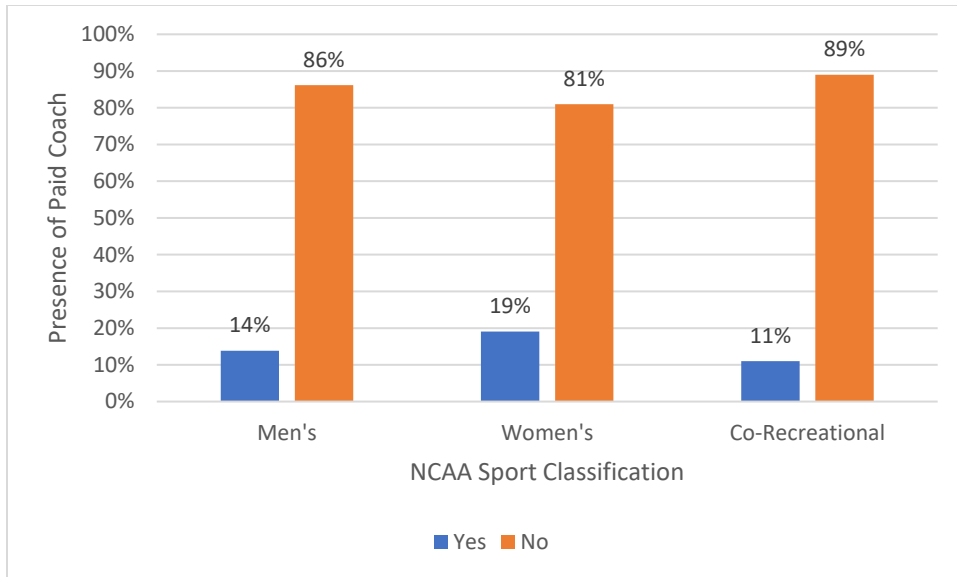
**Table 10**

*Paid Coach as Reported by Respondents*

<b>Paid Coach</b>	<b>Respondents</b>	
	<i>n</i>	%
Yes	46	15
No	263	85
<b>Total</b>	<b>309</b>	<b>100</b>

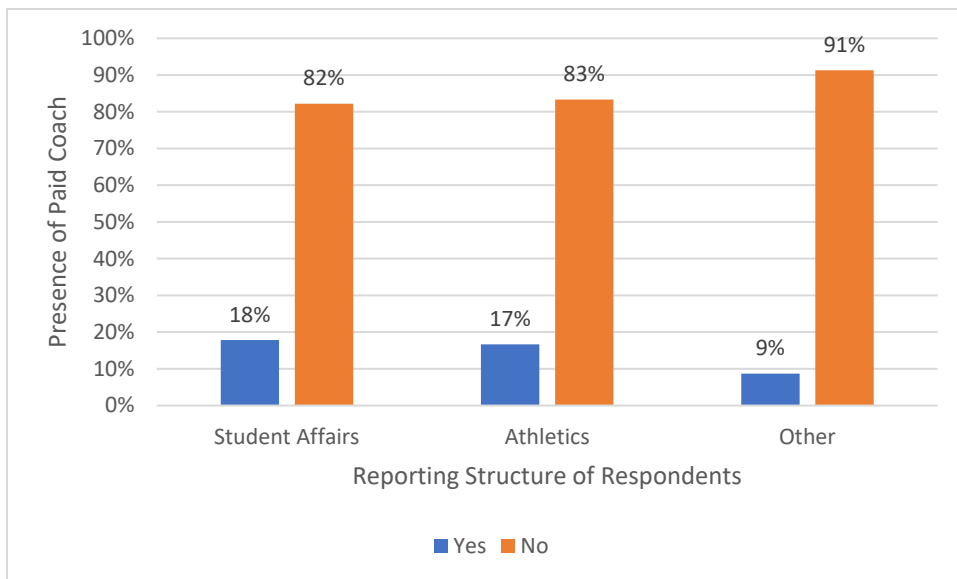
**Figure 8**

*Presence of Paid Coach by NCAA Sport Classification of Respondents*



**Figure 9**

*Presence of Paid Coach by Reporting Structure of Respondents*

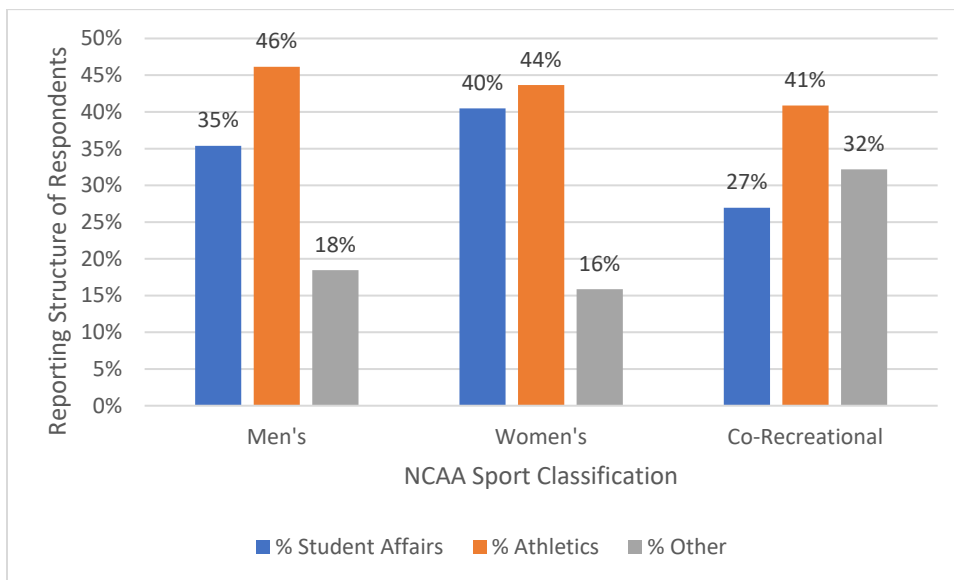


### ***Reporting Structure to Either Athletics or Student Affairs***

The reporting structure to either Athletics or Student Affairs was defined as a binary *Athletics* or *Student Affairs* response and coded as such. I left to the survey respondent to determine to which department they reported; for example, if a Sport Club student leader respondent felt that they reported to Athletics, that response was not judged by any other variable or evaluation. Figure 10 summarizes the self-reported reporting structure by descriptive statistics of the sample.

**Figure 10**

### ***Reporting Structure of Respondents by NCAA Sport Classification***



### ***University Allocated Budget***

The University Allocated Budget was calculated to the nearest whole U.S. Dollar and was standardized as a Z score. University Allocated Budget was self-reported by Sport Club student leaders for the 2019-2020 academic year. A wide range was reported: Sport Clubs received support from \$0–20,000 in annual institutional funding. The difference between no funding and a \$20,000 budget appeared to represent a wide range in financial needs and financial

operations among Sport Clubs. Table 11 summarizes the self-reported values of respondents' University Allocated Budget in terms of Z score.

**Table 11**

*University Allocated Budget Descriptive Statistics*

<b>Budget</b>	<b><i>n</i></b>	<b>Minimum</b>	<b>Maximum</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Allocation	127	\$0.00	\$20,000.00	\$2,982.70	\$3,440.83

***Annual Per Person Member Dues***

Annual per person member dues was calculated to the nearest whole U.S. Dollar and was standardized as a Z score. Annual per person member dues was self-reported by Sport Club student leaders for the 2019-2020 academic year. On average, each Sport Club member paid \$183.67 individually to their Sport Club team as annua member dues for the 2019-2020 academic year. A wide range was reported: Sport Clubs members paid annual member dues ranging from \$0–2,700 in 2019-2020. See Table 12 for member dues data.

**Table 12**

*Annual Individual Member Dues Descriptive Statistics*

<b>Variable</b>	<b><i>n</i></b>	<b>Minimum</b>	<b>Maximum</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Member Dues	130	\$0.00	\$2,700.00	\$183.67	\$343.58

The combination of annual per person member dues and university allocated budget variables were not combined by addition to form an annual operating budget. Instead, the study included an Annual Sport Club Operating Budget variable so that students could self-report that data, which might not include additional funding sources (such as donations to Sport Clubs or

revenues to Sport Clubs from endowments). The next variable therefore included all possible revenues that Sport Clubs self-reported as an Annual Sport Club Operating Budget.

**Annual Sport Club Operating Budget**

Annual Sport Club Operating Budget was calculated to the nearest whole U.S. dollar and was standardized as a Z score. Annual Sport Club Operating Budget was self-reported by Sport Club student leaders for the 2019-2020 academic year. Some Sport Clubs operated only practiced without competing, in campus facilities which were free of cost; therefore, the Annual Sport Club Operating Budget range began at \$0. Highly complex Sport Clubs performed a significant scope of competitions and organizational activity that resulted in the Annual Sport Club Operating Budget range maximum of \$180,000. Examples of expensive and highly complex Sport Club activity may include a Rowing Club that paid a salaried coach and maintained its own insurance for fixed assets including a fleet and self-built floating dock. Examples of low complexity Sport Clubs that only practice and which incur no costs may include a Tae Kwon Do club that watches videos and mimics maneuvers in a gym space that is provided at no cost to the Tae Kwon Do Club. Table 13 summarizes the self-reported values of respondents’ Annual Sport Club Operating Budget in terms of Z score.

**Table 13**

*Annual Sport Club Operating Budget Descriptive Statistics*

Variable	<i>n</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>
Operating Budget	114	\$0.00	\$180,000.00	\$11,167.01	\$23,292.22

**Involvement Quantity**

Involvement quantity was calculated as the average number of practice hours per week and was standardized as a Z score. Involvement quantity was self-reported by Sport Club student

leaders for the 2019-2020 academic year. Sport Clubs ranged from holding no organized practices to practicing 22 hours per week. Student involvement in Sport Club practices is typically structured in a recurring weekly schedule arranged between the Sport Club and an institution. Typically, self-reported data on the average number of weekly practice hours is therefore also the mode—the practice schedule is recurring. Sport Clubs that practiced for as many as 22 hours per week did so throughout the 2019-2020 academic year. Sport Clubs that practiced near the range maximum likely spent more time practicing their sport more than they did attending class. Other Sport Clubs may have practiced for an hour or two, once per week. Table 14 summarizes the self-reported values of respondents’ involvement quantity in terms of Z score.

**Table 14**

*Average Number of Weekly Practice Hours Descriptive Statistics*

<b>Variable</b>	<b><i>n</i></b>	<b>Minimum</b>	<b>Maximum</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Weekly Practice Hours	142	0	22	5.23	3.361

**Competition Quantity**

Competition Quantity was calculated as the number of annual competitions and was standardized as a Z score. Competition Quantity was self-reported by Sport Club student leaders for the 2019-2020 academic year. Sport Clubs ranged from holding no competitions to competing up to 40 times. Competitions typically occur on weekends, and Sport Clubs may compete against more than one opponent in a given weekend. Therefore, a Sport Club that competed in 40 competitions likely played at home on a Saturday and away at another institution on a Sunday, in order for the Sport Club to have competed 40 times across a 28-weekend

academic calendar year. Sport Clubs that competed near the range maximum likely participated in competition nearly every weekend of an academic calendar year, and often participated in more than one competition on some weekends. Sport Clubs that did not compete may not have participated in any Sport Club activity on any weekends. Table 15 summarizes the self-reported values of respondents' Competition Quantity in terms of Z score.

**Table 15**

*Number of Annual Events Descriptive Statistics*

<b>Variable</b>	<b><i>n</i></b>	<b>Minimum</b>	<b>Maximum</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Annual Events	142	0	40	6.15	5.803

Variables also included three leadership scales. Respondent descriptive statistics are presented for the leadership variables, in addition to the descript statistics for the respondent continuous data on their participation and budget.

**EIL**

Emotionally intelligent leadership was calculated using a scale I adapted from the 57-item EILS:I 2.0 into a 19-item short form based on the highest factor loading item per construct to create a 19 item scale. The 19 items and their STDYX Standardization coefficients from the Miguel and Allen study are listed in Table 16, all with significant loadings ( $p < .001$ , two tailed):

**Table 16***EIL Item Coefficients of Selected Items for a Short Form Instrument*

<b>Item</b>	<b>Coefficient</b>
Healthy Self-Esteem 2	.87**
Emotional Self-Perception 2	.89**
Optimism 3	.91**
Authenticity 2	.88**
Flexibility 2	.86**
Initiative 2	.91**
Achievement 2	.90**
Demonstrating Citizenship 2	.86**
Facilitating Change 3	.90**
Inspiring Others 2	.97**
Developing Relationships 1	.92**
Displaying Empathy 1	.88**
Displaying Empathy 2	.89**
Coaching Others 2	.94**
Building Teams 1	.86**
Managing Conflict 2	.90**
Capitalizing on Difference 2	.86**
Assessing the Environment 2	.94**
Analyzing the Group 3	.84**

*Note.* This study's adapted EILS:I 2.0 used a 1-7 response scale from *Never* to *Always* for the 19 items.

Table 17 summarizes the resulting values for my 19-item short form of the EILS:I 2.0.

**Table 17***EIL Scale Descriptive Statistics for the Survey Respondents*

<b>Question</b>	<b><i>n</i></b>	<b>Minimum</b>	<b>Maximum</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Q20 (EIL1)	176	60	100	86.1	13.3
Q21 (EIL2)	176	40	100	88.8	13.3
Q22 (EIL3)	176	40	100	88.3	12.7
Q23 (EIL4)	176	40	100	89.1	13.5
Q24 (EIL5)	176	60	100	89.7	13.4
Q25 (EIL6)	176	40	100	90.1	13.7
Q26 (EIL7)	176	40	100	90.3	13.2
Q27 (EIL8)	176	40	100	85.8	16.7
Q28 (EIL9)	176	40	100	87.5	15.2
Q29 (EIL10)	176	40	100	89.0	13.6
Q30 (EIL11)	177	40	100	86.1	17.3
Q31 (EIL12)	176	40	100	89.4	13.7
Q32 (EIL13)	176	60	100	90.3	12.6
Q33 (EIL14)	176	40	100	81.7	16.4
Q34 (EIL15)	176	40	100	87.0	15.3
Q35 (EIL16)	176	40	100	90.7	12.6
Q36 (EIL17)	176	40	100	90.3	12.5
Q37 (EIL18)	176	60	100	94.2	10.1
Q38 (EIL19)	176	60	100	92.8	11.6

*Note.* Numbers are in % and *n* includes EIL responses pair-wise (total responses = 326). EIL = Emotionally Intelligent Leadership.

**ILI**

Identity Leadership was calculated using a scale I adapted the from the 15-item ILI into an 8-item short form based on the two highest factor loading items per construct to create an 8-item scale. The 8 items and their STDYX Standardization coefficients from the Steffens (2014) study are listed in Table 18, all with significant loadings where the *p* value is less than .001:

**Table 18***ILI Item Coefficients of Selected Items for a Short Form Instrument*

<b>Item</b>	<b>Coefficient</b>
3 (B)	.92**
4 (B)	.88**
6 (D)	.87**
7 (D)	.88**
9 (C)	.94**
10 (C)	.84**
13 (M)	.90**
14 (M)	.92**

*Note.* This study's adapted ILI used a 1-7 response scale from *Not at all Representative* to *Completely Representative* for the 8 items. ILI = Identity Leadership Inventory. Letters = items.

Table 19 summarizes the resulting values for my 8-item short form of the ILI.

**Table 19***ILI Scale Descriptive Statistics for The Survey Respondents*

<b>Question #</b>	<b>n</b>	<b>Minimum</b>	<b>Maximum</b>	<b>M</b>	<b>SD</b>
Q12 (ILI1)	180	57.1	100	92.3	9.94
Q13 (ILI2)	180	57.1	100	92.5	10.1
Q14 (ILI3)	180	57.1	100	88.8	12.9
Q15 (ILI4)	180	57.1	100	95.5	9.49
Q16 (ILI5)	180	57.1	100	95.6	7.86
Q17 (ILI6)	180	57.1	100	92.5	10.2
Q18 (ILI7)	180	57.1	100	91.3	11.9
Q19 (ILI8)	180	57.1	100	92.1	10.8

*Note.* Numbers are in % and *n* includes ILI scale responses pair-wise (total responses = 326). ILI = Identity Leadership Inventory.

Next, I introduce the SRLS scale item listing in Table 20.

## SRLS

**Table 20**

*SRLS Scale Item Listing*

<b>Question #</b>
Q39 (SRLS1)
Q40 (SRLS2)
Q41 (SRLS3)
Q42 (SRLS4)
Q43 (SRLS5)
Q44 (SRLS6)
Q45 (SRLS7)
Q46 (SRLS8)
Q47 (SRLS9)
Q48 (SRLS10)
Q49 (SRLS11)
Q50 (SRLS12)
Q51 (SRLS13)
Q52 (SRLS14)
Q53 (SRLS15)
Q54 (SRLS16)
Q55 (SRLS17)
Q56 (SRLS18)
Q57 (SRLS19)
Q58 (SRLS20)
Q59 (SRLS21)
Q60 (SRLS22)
Q61 (SRLS23)
Q62 (SRLS24)
Q63 (SRLS25)
Q64 (SRLS26)
Q65 (SRLS27)
Q66 (SRLS28)
Q67 (SRLS29)
Q68 (SRLS30)
Q69 (SRLS31)
Q70 (SRLS32)
Q71 (SRLS33)
Q72 (SRLS34)

*Note.* This study used a 1-5 response scale from *Strongly Disagree* to *Strongly Agree* for the 34 items. SRLS = Socially Responsible Leadership Scale.

Table 21 summarizes the resulting values for the 34-item SRLS.

**Table 21**

*SRLS Scale Descriptive Statistics for the Survey Respondents*

<b>Question #</b>	<b>n</b>	<b>Minimum</b>	<b>Maximum</b>	<b>M</b>	<b>SD</b>
Q39 (SRLS1)	164	80	100	95.2	8.54
Q40 (SRLS2)	163	60	100	96.3	8.39
Q41 (SRLS3)	164	60	100	91.6	10.4
Q42 (SRLS4)	164	60	100	93.9	10.2
Q43 (SRLS5)	164	40	100	86.1	16.5
Q44 (SRLS6)	164	40	100	92.1	12.6
Q45 (SRLS7)	164	60	100	93.7	10.1
Q46 (SRLS8)	164	20	100	93.9	12.6
Q47 (SRLS9)	164	40	100	92.7	11.7
Q48 (SRLS10)	164	80	100	97.4	6.70
Q49 (SRLS11)	164	60	100	96.1	8.54
Q50 (SRLS12)	164	60	100	94.0	10.4
Q51 (SRLS13)	164	60	100	95.5	9.22
Q52 (SRLS14)	164	40	100	94.3	10.1
Q53 (SRLS15)	164	60	100	94.0	9.70
Q54 (SRLS16)	164	40	100	93.5	11.1
Q55 (SRLS17)	164	40	100	94.6	9.93
Q56 (SRLS18)	164	20	100	86.0	16.6
Q57 (SRLS19)	164	40	100	89.1	12.6
Q58 (SRLS20)	164	20	100	90.1	13.6
Q59 (SRLS21)	164	60	100	94.8	9.09
Q60 (SRLS22)	164	40	100	93.0	11.0
Q61 (SRLS23)	164	60	100	93.4	10.4
Q62 (SRLS24)	164	60	100	96.8	7.97
Q63 (SRLS25)	164	60	100	97.1	7.75
Q64 (SRLS26)	164	80	100	96.2	7.86
Q65 (SRLS27)	164	80	100	96.9	7.21
Q66 (SRLS28)	164	40	100	86.1	16.2
Q67 (SRLS29)	164	20	100	89.4	14.8
Q68 (SRLS30)	164	40	100	92.3	11.8
Q69 (SRLS31)	164	40	100	93.0	11.8
Q70 (SRLS32)	164	60	100	92.9	10.8
Q71 (SRLS33)	164	40	100	92.8	11.5
Q72 (SRLS34)	164	40	100	88.5	15.0

*Note.* Numbers are in % and *n* includes SRLS scale responses pair-wise (total responses = 326).

SRLS = Socially Responsible Leadership Scale.

## **Research Question 1: To What Extent do the Items in the EIL, ILI, and SRLS Co-Vary to Form a Coherent Leadership Construct?**

The ELI, ILI and SRLS scales co-varied with statistically significant ( $p < .05$ ) correlation coefficients with negligible or small effect sizes in most cases. Sample adequacy was measured and a satisfactory measure of sampling adequacy according to Kaiser (1974) was found. What I will do in this section is walk through the analyses and the sampling adequacy score in full reporting of the findings related to the overall answer to the research question.

The correlation coefficient strength was a concern; however, the correlations were statistically significant. This study interpreted the findings as a weak association between the three scales (ELI, ILI, and SRLS), which merited further exploration as a coherent leadership construct. Additional analyses were performed and determined that factor analytic techniques were appropriate to proceed; results of the correlation coefficient matrix and additional analysis are presented. I performed an EFA in IBM SPSS 26 on all items included in the ELI, ILI, and SRLS variables.

### **EFA Decision Making and Results**

Detailed reporting of results and EFA decision making is necessary because exploratory factor analysis contains numerous techniques and statistical tests. Decisions and results are presented in an order of operation following the process outlined by Yong and Pearce (2013). The process includes sampling adequacy measures, cleaning data and then extracting factors to achieve a rotated factor solution.

**Sampling Adequacy.** This study met sampling requirements to perform factor analysis according to the Kaiser–Meyer–Olkin (KMO) criterion, despite the closure of data collection

with fewer than the desired 5:1 response to item ratio. Kaiser (1974) developed an Index of Factorial Simplicity which produces a number between 0 and 1 using the below formula.

$$KMO = \frac{\sum_{j \neq k} \sum r_{jk}^2}{\sum_{j \neq k} \sum r_{jk}^2 + \sum_{j \neq k} \sum p_{jk}^2} \quad (1)$$

According to Kaiser (1974, p. 112) “Subjective appraisal, based on extensive experience, suggests that these Indices of Factorial Simplicity may be evaluated according to the following table wherein my KMO score of .824 was meritorious and therefore would be appropriate for factor analysis to be performed according to Kaiser (1974).

in the .90s	marvelous,	
in the .80s	meritorious,	
in the .70s	middling,	(2)
in the .60s	mediocre,	
in the .50s	miserable,	
below .50	unacceptable.	

KMO therefore indicated the proportion of variance in this study’s variables might be caused by underlying factors. In addition, Bartlett’s Test examined the hypothesis that my EFA correlation matrix was an identity matrix indicating no correlation among the measures. Bartlett’s Test must be significant ( $p > .05$ ) to proceed with an EFA. My study passed Bartlett’s Test of Sphericity due to rejection of the null hypothesis due to significant correlation found among the three measures.

**Table 22***Results of KMO and Bartlett's Test for the Exploratory Factor Analysis*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.824
	Approx. Chi-Square	5767.078
Bartlett's Test of Sphericity	df	1,830
	Sig.	.000

In addition to the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity, correlation matrices and anti-image matrices were considered in analysis of the suitability of this study's data for EFA. Bartlett's Test of Sphericity was significant; therefore, the test's null hypothesis that none of the variables being tested may correlate with each other was disproved. Statistically significant correlations among and across the three leadership scale items were expected and found in the correlations matrix.

ILI to EIL correlations are presented first. Across the bivariate correlation coefficients of the eight ILI items and 19 EIL items, only 6 bivariate relationships were uncorrelated with significance at the .01 level (2-tailed). There is a significant positive relationship between the ILI scale scores and the EIL scale scores. The correlation was .59 and was significant with a *p* value less than .01.

ILI to SRLS correlations are presented second. Across the bivariate correlation coefficients of the eight ILI items and 34 SRLS items, more than 100 bivariate relationships correlated with significance at the .05 level (2-tailed), ranging from .02 to .42. There is a significant positive relationship between the ILI scale scores and the EIL scale scores. The correlation was .3 and was significant with a *p* value less than .01.

EIL to SRLS correlations are presented last. Across the bivariate correlation coefficients of the nineteen EIL items and 34 SRLS items, at least half of the bivariate relationships correlated with significance at the .05 level (2-tailed), ranging from .01 to .554. There is a significant positive relationship between the EIL scale scores and the SRLS scale scores. The correlation was .39 and was significant with a  $p$  value less than .01.

According to Cohen (2013), correlation coefficients of .2 or higher are small effect sizes, while an effect size of .5 or greater is a medium effect size. Therefore, the ILI, EIL, and SRLS co-varied with a significant positive relationship for each bivariate correlation. See Table 28 for a correlation matrix.

Given the KMO Measure of Sampling Adequacy, Bartlett's Test of Sphericity and correlation matrix findings, post-hoc analysis of sampling adequacy of the data from 163 completed responses indicated that factor analytic techniques to explore an underlying factor structure and to find a simple structure would be considered appropriate by Kaiser (1974). The next step was cleaning the data.

***Cleaning the Data.*** Missing values were removed from the 326 responses, resulting in the inclusion of 163 responses in the exploratory factor analysis. Responses with missing values must be addressed to *prevent overestimation* (Tabachnick & Fidell, 2007; therefore, I did pair-wise deletion of missing values in all my analyses). Once the data was cleaned, factor extraction was possible.

***Extracting Factors.*** Factors were extracted using the Principal Axis Factor method. The Principal Axis Factor method was chosen for two reasons: first, Principal Axis Factor methodology extracts factors successively until an adequate variance is found in a correlation

matrix; second, Principal Axis Factor methodology performs adequately even when data violates multivariate normality (Tucker & MacCallum, 1997).

The model is shown mathematically where  $X_{ip}$  are the original data ( $i$  is individual,  $p$  is variable),  $m$  are the specific factors,  $\lambda_{11}$  are the factor loadings,  $F_s$  are the factors (1 to  $m$ ),  $\epsilon$  are the errors, and the  $m$ ,  $\lambda$ , and the  $F_s$  are unknown.

$$\begin{aligned}
 X_{i1} &= \mu_{i1} + \lambda_{11}F_1 + \lambda_{12}F_2 + \dots + \lambda_{1m}F_m + \epsilon_{i1} \\
 X_{i2} &= \mu_{i2} + \lambda_{21}F_1 + \lambda_{22}F_2 + \dots + \lambda_{2m}F_m + \epsilon_{i2} \\
 &\dots\dots\dots \\
 X_{ip} &= \mu_{ip} + \lambda_{p1}F_1 + \lambda_{p2}F_2 + \dots + \lambda_{pm}F_m + \epsilon_{ip}
 \end{aligned}
 \tag{3}$$

The Principal Axis Factor extraction analyzed a correlation matrix rather than a covariance matrix, displayed an unrotated factor solution and Scree plot, and extracted based on Eigenvalues greater than 1. The extraction used 25 maximum iterations for convergence and suppressed coefficients whose absolute value was below .35.

***Applying Rules to Determine Number of Factors.*** Because I extracted factors using Eigenvalues greater than 1, Kaiser’s rule (Kaiser, 1974) was in effect; therefore, Eigenvalues > 1 were retained, resulting in a 15-factor model that explained 58.5% of variance. Factors 10, 13, 14 and 15 loaded only two items, making the 15-factor model not a good fit, due to the need for factors to load at least 3 variables for confirmation. Therefore, additional decision-making was necessary after the application of Kaiser’s rule.

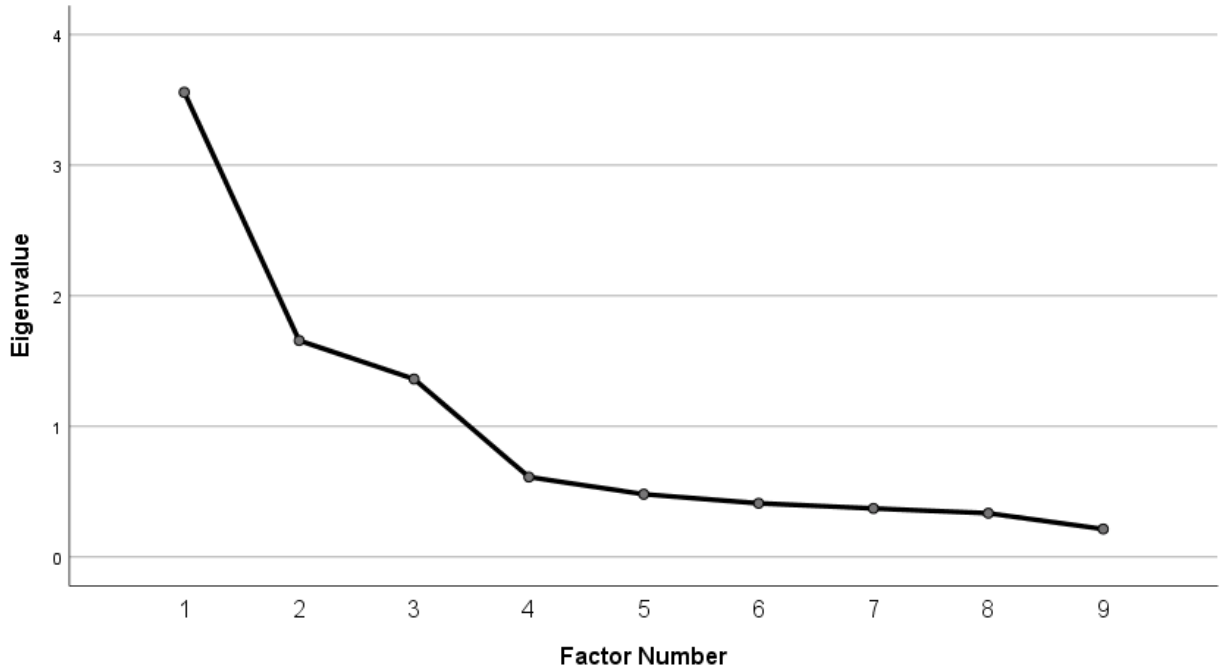
Additionally, the 15-factor model rotated factor matrix failed to achieve simple structure, as several variables cross-loaded across two or more factors; in short, data reduction techniques appeared necessary to achieve simple structure. Kaiser’s rule appeared insufficient as a sole test to determine a number of retained factors.

Kaiser's rule is not the only test used in factor analytic techniques. Other tests for exploratory factor analysis include the Scree test, variance explained criteria, Horn's parallel analysis, Velicer's minimum average partial and Bartlett's Chi Square Test. Each test contributes to interpretability based on relative strengths and weaknesses in testing the exploratory factor analysis. Therefore, this study considered Kaiser's rule, Scree test, variance explained criteria, Horn's parallel analysis and Bartlett's Chi Square Test, alongside conceptual clarity, to determine a number of retained factors and retained variables using multiple tests.

Each test suggested a number of factors to retain. Most tests suggested a 15-factor solution for the data, except for the Scree test. The Scree test steeple was retained at 3 factors, suggest a 3-factor model as a best fit. See the slope of the line in Figure 11 become flat at the fourth factor, making three factors the suggested number of factors by Scree test. The first factor's Eigenvalue exceeds 3, a strong principal component.

**Figure 11**

*Scree Plot of Factors and Eigenvalues of the Exploratory Factor Analysis*



Based on all rules considered, I chose a 3-factor model because 15-factor models do not load items on all factors and proceeded with data reduction by excluding variables based on cross-loading and failure to meet a communality inclusion criteria of .4. See Table 23 for a summary of all rules considered in determining an appropriate number of factors for extraction.

**Table 23**

*Rules Applied to Principal Axis Factoring Extraction of the Exploratory Factor Analysis*

<b>Rule</b>	<b>Target Result</b>	<b>Actual Result</b>
Kaiser's Rule	Eigenvalues > 1	15 factors, Eigenvalues > 1
Scree test	Steeple retained	3 factors, steeple retained
Variance explained criteria	70% cumulative	15 factors, 58.5% cumulative
Horn's parallel analysis	Factors > random	>15 factors > random
Bartlett's Chi Square Test	Point where $P = >.05$	15 factors, $P = >.05$

Resulting communalities are presented, with values above .4 being retained, values above .5 being satisfactory and values above .7 being good. All retained variables pass the .4 criterion for inclusion, except for one; indeed, 3 of the 9 variables pass the .7 criterion for good scores and 5 of the remaining 6 variables pass the .5 criterion for satisfactoriness. In summary, variables are shown to be absorbed into the common.

The retained variables were next analyzed to determine what degree of variance was accounted for by the 3-factor model which included 9 retained variables presented in Table 25. Total variance explained by the 3-factor, 9-item model amounted to 60.7% of cumulative variance with the dataset. Factor 1, Factor 2 and Factor 3 each accounted for approximately 20% of cumulative variance. Factor 1 reported an initial eigenvalue twice that of the other two factors. Communalities ranged from .383 to .873, with the lowest communality, Q62 (SRLS24) item, being the only item with a communality below my .4 cutoff. The item was retained in order to maintain a minimum of three items loaded per factor. The item was also retained due to its conceptual coherence with the factor.

**Table 24***Variance Explained by the Exploratory Factor Analysis*

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	%		Cumulative	%		Cumulative	%		Cumulative
	Total	of Variance	%	Total	of Variance	%	Total	of Variance	%
1	3.558	39.530	39.530	3.190	35.445	35.445	1.979	21.990	21.990
2	1.657	18.409	57.940	1.274	14.154	49.599	1.864	20.709	42.699
3	1.362	15.138	73.077	1.002	11.136	60.735	1.623	18.036	60.735

*Note.* Extraction Method: Principal Axis Factoring.

Variance explained criteria was considered acceptable at 60.7% cumulative total variance explained. The target variance explained was 70%. The 3 factors retained to achieve 60.7% variance were additionally explored by the use of parallel analysis, which established an upper limit maximum number of factors which could be retained.

Horn's parallel analysis was performed using a parallel analysis engine developed by Patil et al. (2008), using R. Results of the parallel analysis were compared to the extracted initial Eigenvalues to select a number of factors greater than random. Results of the parallel analysis suggested more than 3 factors. Because the Scree test justified 3 factors, I determined to retain 3 factors despite the larger number of factors suggested by the variance explained criteria and parallel analysis criteria. The Goodness-of-fit Test using significance from Bartlett's Chi Square test also suggested more factors, which were not supported by the simple structure.

***Achieving a Rotated Factor Solution.*** In my judgment, the combination of test results suggested a 3-factor model and 15-factor model, wherein the 15-factor model could not achieve simple structure. The next step of the EFA was to find a rotated factor matrix using the Varimax rotation method with Kaiser Normalization. The purpose of factor rotation is to find new factor loadings of variables on the extracted factors. Results of the Varimax rotation are presented in Table 25.

**Table 25***Results From an Exploratory Factor Analysis of the ILI, EIL and SRLS Scales*

ILI, EIL and SRLS item	Factor loading		
	1	2	3
Factor 1: Define the Team			
Q12 (ILI1): “I am a model member of my group”	<b>.778</b>		
Q13 (ILI2): “I exemplify what it means to be part of the group”	<b>.906</b>		
Q17 (ILI6): “I create a sense of cohesion within the group”	<b>.613</b>		
Factor 2: Resolve Team Differences			
Q33 (EIL14): “I address conflict with individuals effectively”		<b>.721</b>	
Q34 (EIL15): “I find common ground among different points of view”		<b>.822</b>	
Q35 (EIL16): “I adapt my approach to leadership based on the situation”		<b>.708</b>	
Factor 3: Deliver on Promises with Integrity			
Q62 (SRLS24): “I can be counted on to do my part”			<b>.567</b>
Q64 (SRLS26): “I follow through on my promises”			<b>.718</b>
Q65 (SRLS27): “I hold myself accountable for responsibilities I agree to”			<b>.835</b>

*Note.*  $N = 163$ . The extraction method was principal axis factoring with an oblique (Varimax with Kaiser Normalization) rotation. Factor loadings above .30 are in bold. No items were reverse scored. ILI = Identity Leadership Inventory; EIL = Emotionally Intelligent Leadership scale; SRLS = Socially Responsible Leadership Scale.

No significant cross-loadings were found ( $> .5$ ) across the item rows. First, all items loaded onto one factor. All three factors loaded three items. Secondly, I interpreted the factors to be conceptually coherent to my model. The three factors retained items from distinct scales. Factor 1 included ILI scale items and appeared to center on the ways a leader defines and exemplifies their Sport Club team values and purpose. Factor 2 included EIL scale items and appeared to center on the ways a leader identifies and resolves team differences through common ground. Factor 3 included SRLS scale items and appeared to center on the ways in which a leader delivers on promises through performance. Third, the conceptually coherent simple structure explained over 60% of total variance of the dataset. The EFA and data reduction found a 3-factor model that explained a substantial proportion of the variance and that properly loaded 9 items to be retained.

**Table 26***Descriptive Statistics and Correlations for ILI, EIL, and SRLS Leadership Scales*

Variable	n	M	SD	1	2	3	4	5	6
1. ILI	163	93%	.09		0.59**	0.30**	.85**	.44**	.26**
2. EIL	163	91%	.10			0.39**	.55**	.70**	.27**
3. SRLS	163	95%	.08				.25**	.32**	.56**
4. ILI Short	163	93%	.08						
5. EIL Short	163	87%	.13						
6. SRLS Short	163	97%	.06						

*Note.* ILI = Identity Leadership Inventory, EIL = Emotionally Intelligent Leadership, SRLS = Socially Responsible Leadership Scale.

\*  $p < .05$

\*\*  $p < .01$

**Reliability Analysis of the 9-item, 3-factor Model.** Reliability analysis was performed using Cronbach's Alpha. Results for each subscale (EIL, ILI, SRLS) and for the model are presented. The shortened subscales reported reliability with significantly fewer items than the original scales. The overall 3-factor, 9 item model reported good reliability ( $.9 > r > .8$ ) according to Konting et al. (2009).

**Table 27***Cronbach's Alpha of Subscales and 3-factor Model of Exploratory Factor Analysis*

New Subscale	New $\alpha$	New N of Items	Old Subscale	Old $\alpha$	Old N of Items
Adapted ILI	.833	3	ILI	.860	8
Adapted EIL	.820	3	EIL	.918	19
Adapted SRLS	.753	3	SRLS	.933	34
3-factor Model	.804	9	Unfactored	.954	61

*Note.* ILI = Identity Leadership Inventory; EIL = Emotionally Intelligent Leadership scale; SRLS = Socially Responsible Leadership Scale.

**Research Question 2: to What Extent do Individual, Organizational and Institutional Variables Explain Variance in Sport Club Leadership Scores?**

The 9-item 3-factor Sport Club leadership scores retained in the EFA are presented mathematically below for use as a dependent variable in a regression model.

$$\text{SportClubLeadershipOmnibus} = ((\text{ILI1} + \text{ILI2} + \text{ILI6}) / 3) + ((\text{EIL14} + \text{EIL15} + \text{EIL16}) / 3) + ((\text{SRLS24} + \text{SRLS26} + \text{SRLS27}) / 3) / 3 \quad (4)$$

A stepwise regression was run using the SportClubLeadershipOmnibus as the dependent variable. Individual, Organizational, and Institutional Variables were used as independent or predictor variables, as presented in Table 28.

**Table 28**

*Individual, Organizational, and Institutional Variables as Predictor Variables for Regression*

<b>Predictor Variable</b>	<b>Description</b>
1	Presence or Absence of a Paid Coach
2	Reporting Structure to either Athletics or Student Affairs
3	University Allocated Budget
4	Annual per person Member Dues
5	Annual Sport Club Operating Budget
6	Involvement Quantity as Average Weekly Practice Hours
7	Competition Quantity as Number of Annual Events

Initially, no variables were entered into the equation. Sport Club variables such as number of weekly practices, number of annual events, and annual member dues and operating budgets were not predictive of the SportClubLeadershipOmnibus dependent variable score. Individual, organizational, and institutional variables did not explain variance in Sport Club leadership scores in an aggregate measure. Assumption testing and response data with results are presented. Additionally, spline regression was not performed on average number of practice hours per week on leadership scores because the scatterplot showed no non-linear trend.

**Table 29***Assumption Testing to Determine Appropriateness of Data for Stepwise Regression*

<b>Assumption</b>	<b>Description</b>
1	The dependent variable must be a continuous variable.
2	Two or more independent variables must be present.
3	Independence of observations (i.e., independence of residuals) must be met using the Durbin-Watson statistic.
4	A linear relationship must exist between the dependent variable and each independent variable, as well as between the dependent variable and the independent variables collectively.
5	Homoscedasticity must be shown in the data.
6	Multicollinearity must not be found in the data.
7	Significant outliers, high leverage points and highly influential points must not be found in the data.
8	Residuals (errors) must be approximately normally distributed.

**Table 30***Assumption Testing for a Stepwise Regression*

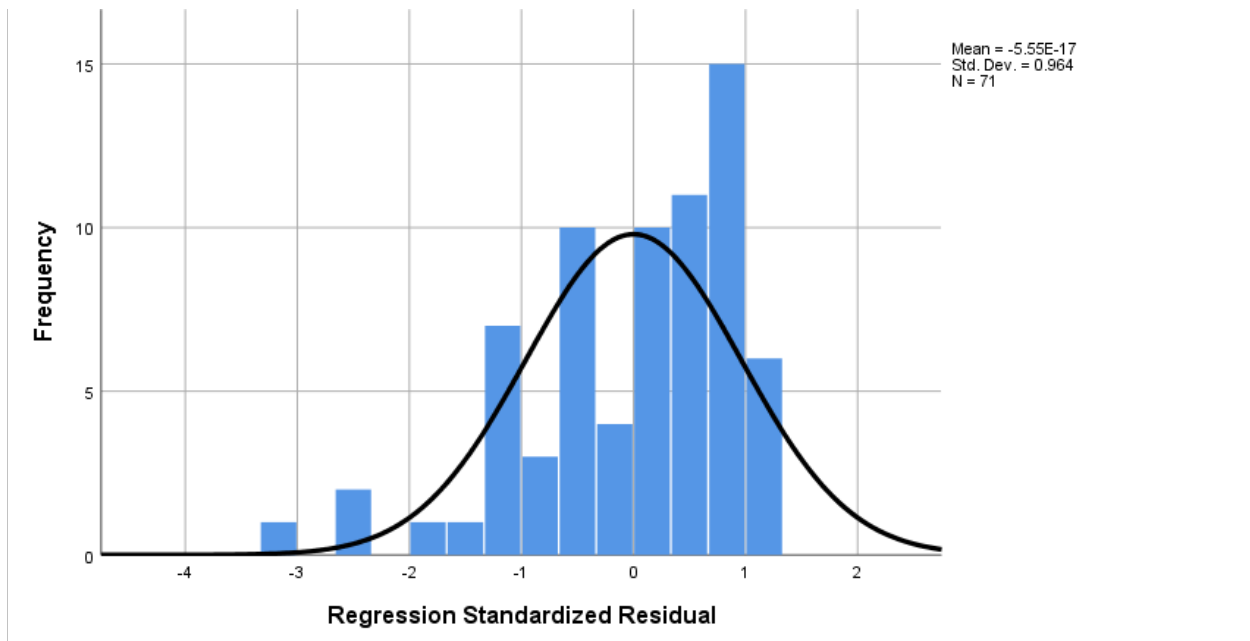
<b>Assumption</b>	<b>Test</b>	<b>Result</b>
1	DV as Continuous Variable	DV is Continuous
2	Two or more IV's Present	>2 IVs
3	Durbin-Watson $\times < 2$	Durbin-Watson = 2.099
4	Linear relationship exists	Scatterplot is not linear
5	Homoscedasticity not violated	Variances dissimilar along the line of best fit
6	Multicollinearity not violated	VIF may suggest Multicollinearity
7	No significant outliers	Cook's Distance failed
8	Residuals normally distributed	P-P Plot and Scatterplot failed

*Note.* DV = dependent variable; IV = independent variable; VIF = variance inflation factor; P-P Plot = probability-probability plot.

First, my response data were transformed into decimals and then percentages to generate continuous data. The predictor variables exceeded two. The Durbin-Watson statistic was calculated and found to be met in Table 32. A linear relationship was not observed; see Figure 12. See also a scatterplot of regression standardized residual over regression standardized predicted value with a line of best fit in Figure 13. Multicollinearity was checked and condition was passed by VIF for Allocation, Individual Membership Dues, Average Weekly Practice Hours, and Number of Annual Events; however, the condition failed for Total Operational Budget, suggesting multicollinearity in that variable. The residuals appeared not normally distributed.

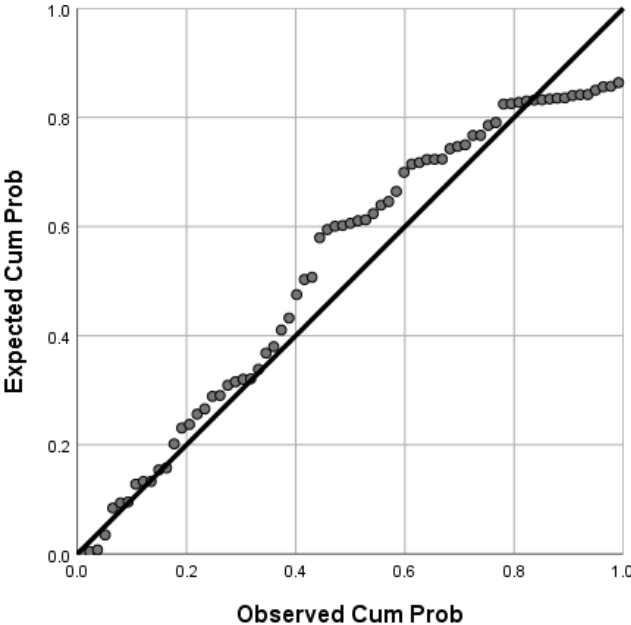
**Figure 12**

*Residuals Plotted on a Normal Distribution Curve*



**Figure 13**

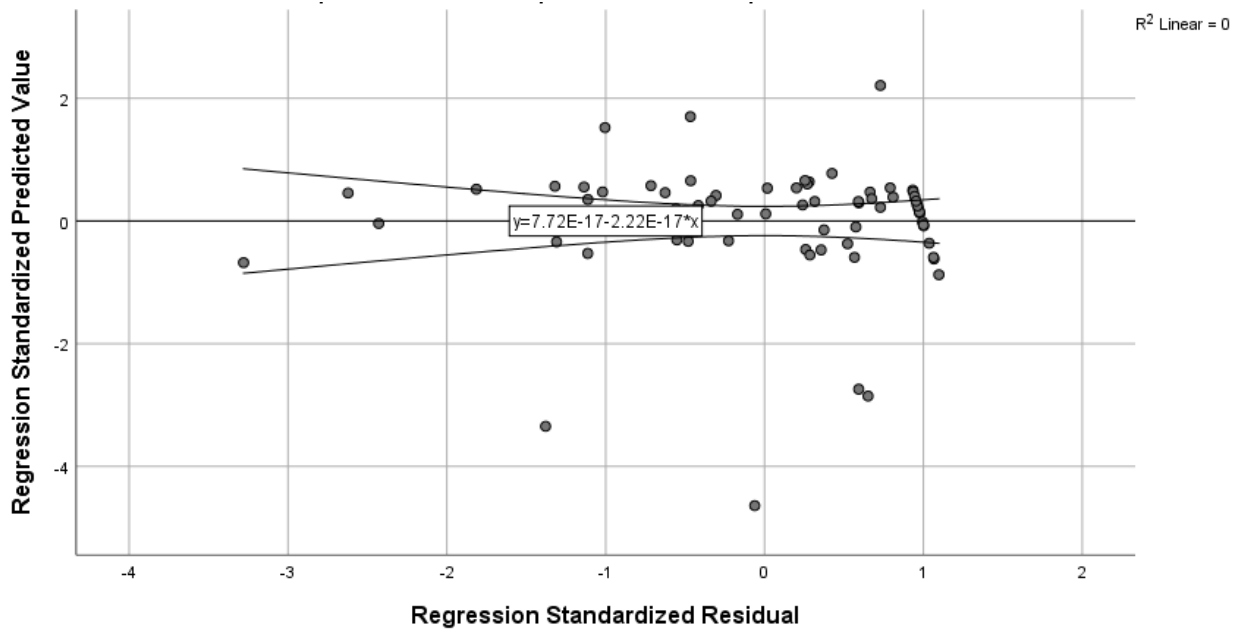
*Residuals Plotted Against a Linear P-P Plot*



*Note.* P-P Plot = Probability-Probability Plot.

**Figure 14**

*Scatterplot of Residuals With Linear Equation and Line of Best Fit*



In summary, Sport Club individual, organizational and institutional variables were not predictive of Sport Club leadership scores. The next chapter will discuss implications of findings, including possible benefits to leadership development regardless of Sport Club team scope of involvement in practices and competitions, or depth in terms operating budget and team dues managed. Implications for future research and connections to the Sport Club leadership literature will also be outlined so that this study's findings will be of benefit to the field and to future researchers.

## **CHAPTER 5**

### **CONCLUSIONS AND RECOMMENDATIONS**

The purpose of this study was to explore the influences of Sport Club participation on Sport Club student leadership development by examining the co-variance of three leadership scales across a national sample of Sport Club student leaders. As presented in Chapter 2, sport club student development literature identified the need for a multi-dimensional leadership scale appropriate for measurement of Sport Club student leaders. Although the literature found associations between Sport Club participation and desired outcomes such as retention, academic success and inclusionary outcomes, the literature recommended additional research to develop a multi-dimensional leadership instrument using validated scales and Sport Club variables. Therefore, this study conducted a cross-sectional survey of a broad Sport Club sample and collected data on Sport Club variables and validated leadership scales. The mission was to determine if multiple instruments co-varied enough to be used as a multi-dimensional instrument for Sport Club student leaders, and to what degree Sport Club variables influenced those leadership scores. My research questions were:

1. To what extent do the items in the ELI, ILI, and SRLS co-vary to form a coherent leadership construct?
2. To what extent do individual, organizational and institutional variables explain variance in Sport Club leadership scores?

As a road map of my conclusions and recommendations, this chapter begins with a summary of results. After introducing study results, this chapter then compares in parallel

formatting this study's literature review with this study's results in such a way as to nest this study's findings in the sport club development literature. Brandishing my nested findings from the literature, this chapter outlines and considers implications to practice for Sport Club administrators, higher education institutions, and Sport Club student leaders. Having considered implications to practice, this chapter also then describes implications and recommendations for future research based on this study's findings, limitations, and delimitations.

### **Summary of Results**

The two research questions of this study organize the summary of results. The first research question asked to what degree three leadership scales, the ELI, ILI, and SRLS, co-varied to form a coherent Sport Club leadership construct. An exploratory factor analysis derived a latent simple structure of 3 factors and 9 items from the original three scales and 61 items. The 3-factor model was suggested by Scree test and conceptual coherence; and the model nearly met my self-defined a priori target of 70% total cumulative variance explained, as established by my proposal contract. The model explained 60% of total variance. The 3-factor model displayed acceptable sampling adequacy and statistical significance based on its KMO and Bartlett's Test. The adapted 9-item 3-factor short form of the EIL, ILI and SRLS scales reported acceptable alpha scores compared to the original 61 items. Importantly, the 3-factor, 9-item model reported statistically significant correlations with small to medium effect sizes between and among the EIL, EIL-short, ILI, ILI-short, SRLS, and SRLS-short scales.

The second research question asked to what degree do Sport Club individual, organizational and institutional variables explain variance in Sport Club leadership scores. A stepwise regression analysis reported that Sport Club variables were non-significant and uncorrelated with the composite Sport Club leadership score of the 9-item, 3-factor model

retained from the EFA analysis. For this second research question, the null hypothesis was confirmed; that is, Sport Club individual, organizational and institutional variables did not explain variance in a composite Sport Club leadership score.

The sample reported high mean scores on the EIL, ILI, and SRLS scales, with reported scores ranging from 86% to 100% across all items. Demographic characteristics collected from the sample resulted in a dataset where most respondents were White (81%) participants of sports sanctioned as Women's sports (41%) by the NCAA and recognized by Athletics (44%) more frequently than by Student Affairs or Other departments. More than 80% of the respondents did not enjoy the benefit of a paid coach to provide instruction. Largely organizing their own instruction, Sport Club student leaders managed an average University Allocated Budget of \$2,982.70, average Annual Per Person Member Dues of \$183.67, and average Total Operating Budget of \$11,167.01. The reported scope of funding enabled Sport Club leaders to compete in annual events reported to average 6 with as many as 40 and as few as 0 events in a year. Besides competition, respondents also reported participating in an average of 5 weekly practice hours ranging from 0 to 22 on average per week.

Interpretation of my findings must account for the impact of COVID-19 on my sample and their participation in Sport Club activity. My results chapter began by announcing that my study failed to meet an a priori target of 250 completed responses. The number of incomplete responses challenged my study and affected the sample. The 163 completed responses also often included "I don't know" responses to open text response boxes. Consequently, my sample size both failed to meet a desired 5:1 response to item ratio and challenged analysis of desired Sport Club contextual variables. On the other hand, this study adhered to best practices in both the EFA and post-hoc analysis of sampling adequacy when determining the appropriateness of

performing the exploratory factor analysis. As a repeat of the announcement made in my results chapter, I caution the reader to carefully examine this study's findings for all reported tests, findings and subsequent claims.

### **Discussion of Findings Compared to the Sport Club Development Literature**

**Implications for Practice for Sport Club Administrators.** Evaluation of Sport Club leadership is a primary implication for Sport Club Administrators in their practice. This study aided the evaluation of leadership for Sport Club student leaders by providing some evidence that Sport Club leadership scores may co-vary across three leadership scales that were developed to measure emotional intelligence, identity-based leadership, and socially responsible leadership—all discrete leadership constructs. My study suggests that the EIL, ILI, and SRLS scores co-vary because the leadership constructs are practiced by Sport Club student leaders. If all three leadership constructs are practiced by Sport Club student leaders, then Sport Club administrators are recommended to employ presently developed resources to build Sport Club student leadership capacity across the three scales. For example, Sport Club administrators may conduct a workshop for each scale in a leadership series. The series could include an Identity Leadership Inventory workshop where participants rate themselves on the ILI short form and then discuss with one another behaviors and actions they have found to be successful in defining their team identity, mission, vision and values. Another workshop could engage participants in emotional intelligence training through a consultant, a workshop on the EIL short form items, and discussion. A third workshop could position Sport Club student leaders in a collaborative scenario challenging the Sport Club student leaders to develop and follow through on goals set to achieve a particular team performance mission.

Resources developed by the EIL, ILI, and SRLS scale researchers and the intellectual property related to them may be useful for Sport Club Administrators to explore. The application of resources related to a scale to Sport Club student leaders was found in the Sport Club development literature in the case of Correia-Harker and Hall (2019), who applied suggestions for practice for Sport Club student leaders to develop further in SRLS as measured by the MSL (Correia-Harker & Hall, 2019). My suggestion is that Sport Club administrators apply emotional intelligence and identity-based leadership training to Sport Club student leaders, for example conducting a workshop where participants take the ILI short form and then pair and share ways they apply the four dimensions of identity leadership skills on their Sport Club teams.

A second implication for practice for Sport Club Administrators is to consider measuring their Sport Club student leaders' scores across their time as Sport Club student leaders using my proposed 3-factor, 9-item Sport Club leadership model. Sport Club administrators could gauge the relative strengths and areas for improvement of all Sport Club student leaders in a succinct and statistically sound model. A conceptually valuable outcome of this study was the finding that the EIL, ILI and SRLS co-varied to form a coherent leadership construct which can be measured using 9 items. The power of a simple and concise short form of the EIL, ILI, and SRLS makes possible routine assessment and evaluation of leadership development practices and programs for Sport Club administrators. The restriction of licensing agreements being necessary for the SRLS holds implications for development of my second recommendation. Future researchers must partner with the MSL to conduct research using the MSL and the SRLS.

**Implications for Practice for Higher Education Institutions.** One possible interpretation of this study's finding that Sport Club variables were not predictive of leadership scores is hopeful and optimistic: Sport Club student leaders may develop and practice

multidimensional leadership skills regardless of differential funding levels, competition portfolios or weekly practice investment. Implications of this interpretation to higher education institutions is that Sport Club participation of any kind may allow Sport Club students to lead. In that regard, I would recommend that higher education institutions support broad-based Sport Club programs that allow participation across the study body and across as many Sport Club teams are practicable for each institution's facility space, budgets, and administrative resources. The benefits of Sport Club participation for leadership development appear not to require a \$100,000 program with a paid coach and more than 20 weekly hours of practice, in order for Sport Club student leaders to apply EIL, ILI, and SRLS skills and behaviors in their approaches to Sport Club leadership. Such broad access to development leadership opportunities is encouraging, if supported by higher education institutions.

Specific practices that higher education institutions could adopt would involve definitions of Sport Club teams and recognition of those teams. Higher education institutions that define Sport Clubs to be not only competitive, but also recreational and instructional would then extend Sport Club recognition, access to facilities, and some resources, to a broad base of Sport Club teams. Not all of the teams would compete, but if all the teams enjoyed the experience of being on a Sport Club team, then the opportunity for leadership development would reach a wide section of the student body.

**Implications for Practice for Sport Club Student Leaders.** Based on the short form of the EIL, ILI, and SRLS that my EFA found, I would encourage Sport Club student leaders to focus on three key areas of their leadership practices with their Sport Club teams. First, I recommend Sport Club student leaders spend time with their teammates explaining what their team is in terms of its mission, vision, and values, and in terms of how the Sport Club leaders

make everyday decisions to try to embody those team values in their individual choices. Next, I would encourage Sport Club student leaders to identify conflict among the team members early and to define the problem. Once the problem is identified and defined quickly, the Sport Club student leader could begin to search with their teammates for common ground and use commonalities for resolution of conflict on their team. The implication is that comfort with the existence of conflict is necessary in order to define and describe conflict. If Sport Club student leaders are averse to conflict, then they may be less likely to describe it in a way that leads to resolution of it. Third and last, I would recommend that Sport Club student leaders spend time thinking about the promises they make to their teammates in all facets of organizing and running the team. My study's finding suggests that delivering on promises and doing what you say you will do are important components of Socially Responsible Leadership for Sport Club teams. This finding differs from the literature, which reported that Socially Responsible Leadership practices including conversations about diversity and deliberative dialogue practices held promise for Sport Club leadership development. My findings suggest that leadership training focusing on practical ways for student leaders to define their team's identity, to identify and address conflict without being conflict avoidant, and to develop a pattern of interactions where important promises are made explicitly and kept attentively. My recommendations for practice are accompanied by recommendations for future research that arose while I critiqued my own study's findings.

### **Recommendations for Future Research**

Given my findings, I offer recommendations for future research that may improve on existing Sport Club leadership development knowledge, research, and methodologies applied to the literature. First, future research should probe my Sport Club leadership construct adapted

from the EIL, ILI, and SRLS. As shown in Table 27, the EIL, ILI, and SRLS covaried and formed an 3-factor, 9 item model. Future study should also analyze my EFA decision making and the affect my sample size may have imparted on the analyses and findings. Specifically, Conway and Huffcutt (2003) recommended the use of confirmatory factor analysis (CFA) to perform data reduction of a known scale; my EFA as reported requires CFA before this study's 3-factor model may be confirmed. Any CFA administering my proposed 3-factor, 9-item model to a new sample would benefit from an optimal 5:1 response to item ratio in its response rate.

**Sport Club Variables not Predictive of Sport Club Leadership Scores.** Second, future research should study the Sport Club variables this study entered as predictor variables on my study's 3-factor, 9-item model as the dependent variable. As previously discussed, the no Sport Club variables were found to predict the Sport Club leadership score. Based on the data and stepwise regression results, additional research may employ quantitative and qualitative techniques to further explore hypothesized associations between Sport Club variables and Sport Club leadership scores in new ways that my study did not perform.

For example, my study may be enhanced through the collection of a new data point: Sport Club(s) affiliation by respondents. If my 3-factor, 9-item model were administered to a new sample of Sport Club student leaders, and the respondents were asked to report Sport Club team affiliation(s), future research may perform cluster analysis to categorically place respondents into groups for future multivariate analysis of variance.

If Sport Clubs were grouped by cluster analysis, qualitative research may explore the ways in which Sport Club student leaders report similarities and differences in their application of EIL, ILI, and SRLS leadership items across groups formed by cluster analysis. Such qualitative research may also explore what, if any, Sport Club variables supported their

development of the Sport Club leadership item competencies. In summary, my finding of no predictive regression model explaining variance in Sport Club leadership scores by Sport Club variables may likely be the result of complexity across Sport Club student leaders' varied experiences across many team sports. Such future research may also consider research questions comparing Sport Club student leaders' scores and non-Sport Club members' scores on this study's adapted short form of the EIL, ILI, and SRLS scales.

**Comparison of Sport Club to Non-Sport Club Students.** Third, my study's findings and the Sport Club development literature would benefit from research exploring the ways in which Sport Club and non-Sport Club student leaders practice the EIL, ILI, and SRLS leadership scale items. Research questions that could be explored include the perceived efficacy of the EIL, ILI, and SRLS items to the respondents, as well as frequency of use and self-ratings from the respondents about the leadership scales. Some research has explored group differences between Sport Club and non-Sport Club members on SRLS leadership scores, but future research may also address group comparisons for the EIL, ILI, and my adapted short form of the EIL, ILI, and SRLS.

**Application of EIL and ILI to Sport Club Respondents.** Fourth, my findings suggest that associations between the EIL and ILI scales and the SRLS scale may merit future study of supports that Sport Club student leaders enjoy, and which may be associated with the application of EIL, ILI, and SRLS leadership items. Quantitative and qualitative approaches are necessary to further define the role that EIL, ILI, and SRLS items may play in Sport Club student leaders' own words and responses. Research should also explore the Sport Club and higher education institutional environment, searching for any variables that may function as supports for the development and application of the EIL, ILI and SRLS items for Sport Club student leaders.

Comparison between Sport Club student leaders and non-Sport Club members would also provide further context in the Sport Club leadership development literature.

Finally, given the impact of COVID-19 on my data collection, future research should attempt to replicate my study of Sport Club variables on Sport Club leadership scores using items related to a year in which Sport Club student leaders fully utilize resources and fully participate. Future research should use the 3-factor, 9 item Sport Club leadership scale adapted from the EIL, ILI, and SRLS using a sample from the year in which data is collected. My study asked a sample to respond to a survey about their experiences a year prior to the survey administration, during the COVID-19 pandemic. Data were missing for many Sport Club variables reported on by the sample. The Sport Club variables may merit continued attention with optimal data collection and sampling methodology. The sampling limitation of my study is one of several that merit further critique.

Synthesizing my findings with the existing Sport Club development literature is an important final piece of my recommendations for future research. My study demonstrated that validated instruments were able to measure a multi-dimensional leadership construct in a sample of Sport Club student leaders. The co-variance found among the EIL, ILI, and SRLS encouraged me to also search for and find a simple structure among the EIL, ILI, and SRLS data using EFA. My 3-factor, 9-item simple structure model is a possible short form of the EIL, ILI and SRLS for Sport Club student leaders. The use of the 3-factor, 9-item model as a dependent variable revealed that Sport Club variables were not predictive of Sport Club leadership scores. These findings are nested in a consideration of leadership theory, its elements, and its research base.

## **Nested Findings of this Study in the Literature Review**

### ***Major Elements of Leadership Theory***

Leadership theory is categorized as trait-based, behavior-based or skill-based by Northouse (2019). The multidimensional leadership instruments used in my study applied behavior and skill leadership theories by measuring the frequency and self-rated competence of Sport Club student leader respondents using the EIL, ILI, and SRLS. This study did not conceptualize leadership as a trait-based construct that cannot be learned or improved. Rather, my study attempted to define a multi-dimensional leadership instrument which could evaluate leadership for Sport Club student leaders. The co-variance of the EIL, ILI, and SRLS implied that leadership behaviors and skills related to emotional intelligence, identity-based leadership and socially responsible leadership are associated positively and act in the same direction. Predictor Sport Club variables were not predictive of leadership scores in my sample. My findings are therefore nested in behavior-based and skill-based conceptions of leadership more so than traits or otherwise environmental variables.

Behavior-based leadership research may be augmented by my study's findings of an EIL, ILI, and SRLS simple structure, in that my model revealed a latent factor that included behaviors best described as acting with integrity. The three main factors were measured by items that would require leaders to engage in behaviors that mirrored team mission, vision, and value statements; to identify conflict and find shared ground across situations; and to do what leaders said they would do. The 3-factor model reported by my study is behaviorally motivated in its recommendations for practice for Sport Club student leaders. In all senses, actions speak louder than words.

Skill-based approaches to leadership embraced leadership as a learnable skill, according to Northouse (2019). My study also regarded leadership as learnable skills as in emotional intelligence leadership skill-based theory, and recommended implications for practice for Sport Club administrators who may be in position to aid Sport Club students in development of their leadership. Specifically, my recommendations added to the Sport Club development literature that it may be necessary to consider leadership development along the EIL and ILI scales, as well as the literature's existing recommendations for growth in the SRLS scale as measured by the MSL.

### ***Assessment of Leadership Theory***

Although my study did not employ trait-based leadership instrumentation, my study did benefit from the observational and factor analytic techniques pioneered by trait-based leadership theorists, such as Rammstedt and John (2007) and the BFI-10 developed by them. The use of EFA in my study may have proposed a short form of the EIL, ILI, and SRLS that may be used for Sport Club student leadership development evaluation. My study benefitted from the methodological contributions of trait-based leadership research, the belief that leadership can be learned according to skill-based leadership research, and the knowledge that behavior is central to leadership from behavior-based leadership research.

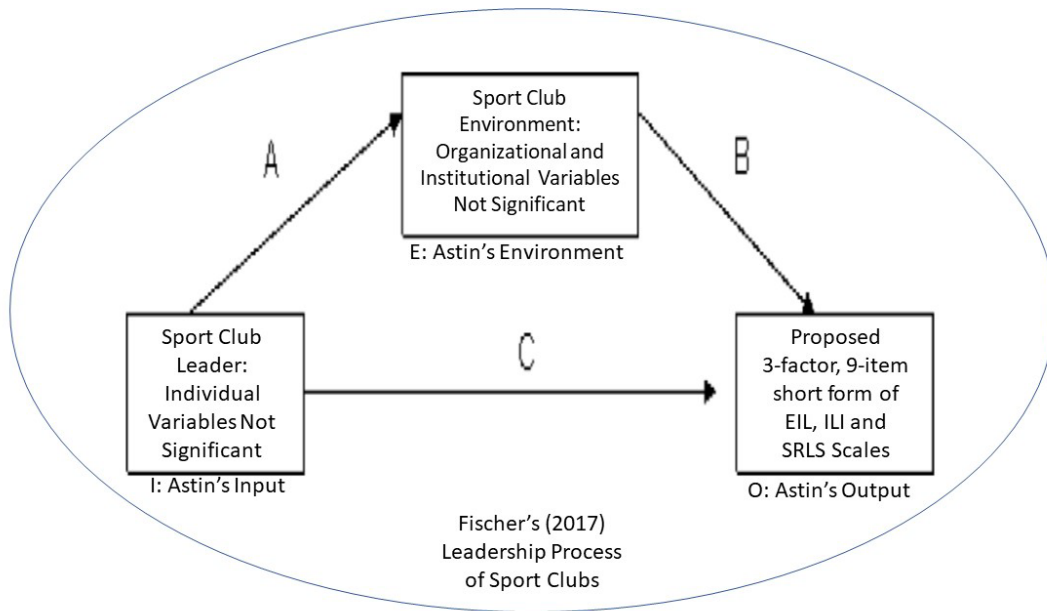
### ***Relation of Leadership Theory to my Proposed Sport Club Leadership Construct and Scale***

Based on my findings that the EIL, ILI, and SRLS co-vary, and that a simple structure may suggest a short form of the scales, my study made strong relations back to leadership theory. The previous sections outlined ways in which leadership theory provided methodological frameworks for application to my EFA and regression analysis, and this section provides a feedback loop to the literature and my conceptual framework. My nested framework of the Astin

(1991) and Fischer et al. (2016) models was informed by my confirmation that Sport Club leadership functions three dimensionally along EIL, ILI, and SRLS leadership constructs, and was measured reliably by my proposed multidimensional leadership instrument. The nested framework with my confirmed EIL, ILI and SRLS scales portrayed as a coherent output is presented in Figure 15.

**Figure 15**

*A Nested Framework: I-E-O College Impact Model Nested Within a Leadership Process Model With a Proposed Sport Club Leadership Scale That is a Short Form of the EIL, ILI and SRLS Scales*



*Note.* EIL = Emotionally Intelligent Leadership, ILI = Identity Leadership Inventory, SRLS = Socially Responsible Leadership Scale.

Individual, organizational, and institutional variables were not found to associate with or predict Sport Club leadership scores. Sport Club student leaders did not report scores with differences across hypothesized predictor variables. The predictor variables and non-significant results may influence future Sport Club research.

**Table 31**

*Individual, Organizational, and Institutional Variables*

<b>Predictor Variable</b>	<b>Description</b>
1	Presence or Absence of a Paid Coach
2	Reporting Structure to either Athletics or Student Affairs
3	University Allocated Budget
4	Annual per person Member Dues
5	Annual Sport Club Operating Budget
6	Involvement Quantity as Average Weekly Practice Hours
7	Competition Quantity as Number of Annual Events

*Note.* No predictor variables reported significant ( $p < .05$ ) correlations with leadership scores

The overall task to connect this study’s findings to my conceptual framework was accomplished with respect to Sport Club leadership scores, which co-varied and formed a coherent framework. The 3-factor, 9-item latent factor may be a model worthy of confirmatory factor analysis on a new sample to attempt to confirm the model’s stability and goodness of fit. The Sport Club variables which reported non-significant associations with Sport Club leadership scores merit further investigation in the field of Sport Club research.

### **Sport Club Research**

#### ***Major Elements of the Research to Which My Study Contributes***

My study contributed to the Sport Club Research literature by expanding the way in which the Sport Club Research conceptualized leadership. The body of literature considered leadership in terms of selected leadership skills inventoried by M. Crowder (personal communication, June 24, 1998) and Hall-Yannessa and Forrester (2005). The inventory included

simple items such as respecting others' rights and demonstrating competence in stress management. Haines and Fortman (2008) further reported Sport Club leadership outcomes that they categorized as travel planning skills, sense of belonging, time management, school pride, and overall leadership development (Haines & Fortman, 2008). Overall sport club leadership outcomes were also compared to outcomes from non-Sport Club members by Lower et al. (2013), who also postulated that Sport Club variables may influence leadership among Sport Club student leaders. My regression analysis did not support Lower et al. (2013) in their suggestion that Sport Club variables influenced or predicted leadership scores. Several Sport Club researchers studied Sport Club participation on non-leadership outcomes; my study does not contribute much to studies that do not include leadership in their research questions. Correia-Harker and Hall (2019) studied Sport Club members and non-members using the SRLS as included in the MSL survey instrument, which is meaningful to my study because my study found that the SRLS co-varies with the EIL and ILI scales.

### ***Summary of Research and Recommendations***

My study suggests that the MSL and its Social Change Model of Leadership may not be the only leadership model that can be used to measure leadership among Sport Club student leaders. In fact, the EIL and ILI appear to co-vary in leadership among Sport Club student leaders. My recommendations for future research, nested in the existing leadership and sport club research, merit attention toward multidimensional leadership models and instruments which attend to the multiple domains of leadership that Sport Club student leaders use. My recommendations for practice consider the multidimensional short form instrument proposed by my study, a 3-factor, 9-item short form of the EIL, ILI and SRLS. Critique of the study will follow. See Table 34 for a summary of findings nested in Sport Club research.

**Table 32***A Synthesis of Sport Club Student Development Literature and This Study's Findings*

<b>Author(s)</b>	<b>Recommendations</b>	<b>Findings Related to Recommendations</b>	<b>My Recommendations for Future Research</b>
M. Crowder (personal communication, June 24, 1998)	Recommended factor structure validation of SLSI scale.	SLSI was not included in this study, but this study found a simple factor structure	This study's proposed 3-factor, 9-item model should be confirmed and validated
Hall-Yanessa & Forrester (2005)	Recommended a multi-dimensional leadership scale.	EIL, ILI and SRLS co-vary as multidimensional leadership scale	The EIL, ILI and SRLS short form is recommended for validation study
Haines & Fortman (2008)	Recommended use of a validated leadership instrument.	EIL, ILI and SRLS are validated instruments used in this study	The EIL, ILI and SRLS may be validated across a random sampling of all students
Lower et al. (2013)	Hypothesized about influential factors impacting Sport Club outcomes.	Sport Club variables were not reported to influence Sport Club leadership scores	Sport Club variables may be studied by team using cluster and qualitative analysis
Kampf & Teske (2013)	Noted the single campus sample limited generalizability.	Purposeful criterion sampling of this study improved on single campus sample methodology of Sport Club research	Purposeful criterion sampling of related Sport Club single campus findings may improve findings and the research
Vasold et al. (2019)	Noted influential Sport Club contextual factors may be studied by frequency.	Sport Club variables included in this study were evaluated by frequency	Use of frequency variables in future Sport Club research is recommended
Lifschutz (2019)	Recommended a validated scale to study Sport Club variables on outcomes.	EIL, ILI and SRLS were used as dependent variables as an outcome Sport Club leadership score in this study	If the 3-factor, 9-item model is validated, it is recommended as a Sport Club leadership scale and primary evaluative outcome
Lower-Hoppe et al. (2020)	Recommended broader sampling and analysis of Sport Club variables including time in practices, and so forth.	Average number of weekly practice hours was a variable in this study	Sport Club variables bear further analysis for potential impact on other outcomes

<b>Author(s)</b>	<b>Recommendations</b>	<b>Findings Related to Recommendations</b>	<b>My Recommendations for Future Research</b>
Correia-Harker & Hall (2019)	Recommended exploration of apparent differential leadership outcomes for Sport Club participants compared to other Campus Recreation programs; hypothesized Sport Club participation is discrete	Although this study did not compare Sport Club leadership scores to non-Sport Club students, this study was conducted with an assumption that Sport Club leadership is a product of a Sport Club leadership process at a conceptual level in its framework	Comparison of a random sample of non-Sport Club members to a purposeful criterion sample of Sport Club student leaders may explore any potential differences between groups

*Note.* SLSI = Student Leadership Skills Inventory; EIL = Emotionally Intelligent Leadership scale; ILI is Identity Leadership Inventory; SRLS = Socially Responsible Leadership Scale.

## **Critique of Study and its Limitations, Delimitations**

Critiquing my own study is a form of suggestion for future research. In the following section I will provide a critique of my study's methodology related to the EFA, stepwise regression and overall study design, to aid future research in the Sport Club development literature. My critique begins with the EFA conducted in my study.

**EFA Purpose as Impactful to the Study.** EFA is most effective when it is central to the study's purpose. Conway and Huffcutt (2003) reported that non-impactful uses of EFA to a study purpose included data reduction without attempting to find latent constructs and preliminary evaluation of variables before actual hypothesis testing. I attempted to find latent factors within three leadership scales that, when found, described a latent 3-factor, 9-item model which explained 60% of variance in the data and which excluded many of the original EIL, ILI and SRLS variables due to cross-loading. First, I attempted to find and did find a latent construct by using EFA analysis. What the latent construct means is up to interpretation by the researcher and academic community. I posit that the simple structure I found requires confirmatory analysis and academic discussion as to its nature: is my study's simple structure a short form of the EIL, ILI, and SRLS scales or is it a unique and latent factor that is germane to Sport Club leadership? This question is central to my study and so a critique of this study's use of EFA may conclude that performing an EFA was impactful. Second, I prepared a short list of EIL, ILI, and SRLS variables for inclusion in a stepwise regression analysis of Sport Club variables on leadership scores. Plainly, I did not merely evaluate variables before entering them into hypothesis testing for a regression analysis; rather, I used EFA with a purpose impactful to my study and its research questions. I encourage future Sport Club development research to use EFA when and

how suggested according to Conway and Huffcutt (2003). How EFA is performed is another aspect which merits critique.

**High-Quality EFA Decision-Making in the Study.** EFA decision making requires significant time dedicated to each decision-making point in the data analysis. Significant points in EFA analysis include selection of the factor extraction model, use of acceptable criteria for determining the number of factors to extract, and choice of factor rotation criterion that makes interpretability possible through finding of a simple structure.

First, for my selection of the extraction model, I followed best practices by employing a common factor analysis extraction method, principal axis factoring, instead of employing principal component analysis. Principal component analysis is not exploratory, due to its treatment of factors. Exploratory factor analysis extraction methods account for variance due to common and specific factors, while principal component analysis assumes all variance is accounted for by common factors. My use of common factor analysis through principal axis factoring extraction was supported by Conway and Huffcutt (2003) recommendations to apply a common factor analysis method for the purpose of latent factor identification—a recommendation that was not observed in a meta-analysis of EFA use by Conway and Huffcutt (2003). In summary, my use of principal axis factoring enabled my exploratory factor analysis to find latent factors in the dataset so that the EFA results may be analyzed in a subsequent sample by CFA.

Second, Conway and Huffcutt (2003) outlined use of acceptable criteria for determining the number of factors to extract. My study evaluated multiple tests in order to synthesize the tests' suggested number of factors for extraction. The synthesized and wholistic evaluation of criteria that I employed allowed my study to pursue a 3-factor model that explained 60% of

cumulative variance for my dataset. My study benefitted from the application of a broad set of recommended criteria for factor extraction in that my 3-factor model may be explained and generally defensible against reasonable critique. Such a reasonable critique is possible and the EFA performed in my study should be inspected for its use of cross-loading as a criterion for variable removal in pursuit of a simple structure. The presence of significant cross-loading posed a challenge in that reduction process. The 3-factor, 9-item model presented in my study benefitted from acceptable communalities among the items once offending cross-loading variables were removed. The presence of such messy cross-loading caused me to cautiously proceed in the selection of an acceptable number of factors to retain. Many use EFA with one or two rules for extracting factors. For example, the Conway and Huffcutt (2003) meta-analysis found that between 13.8% and 20.7% of selected studies reported the application of multiple techniques to determine a suggested number of factors to extract. Due to my data, my study may therefore be characterized as having employed cautious decision-making relative to the number of factors to extract in my EFA model before performing a rotation method.

Third, my 3-factor model applied a factor rotation method that successfully obtained a simple structure. A simple structure is one in which factor loadings do not exhibit cross-loading of one or more variables across more than one factor. Conway and Huffcutt (2003) argued that oblique rotation is preferred when attempting to find a simple structure; however, they also noted optimism about Varimax rotation due to its effect: “to maximize the variance of squared loadings on a factor (i.e., to produce some high loadings and some low loadings for each factor)” (p. 152). My use of Varimax rotation achieved a simple structure, despite Varimax rotation being orthogonal and not oblique. Therefore, my study may be critiqued as to its rotation method. I chose varimax rotation in order to reduce loading across factors for items and that rotation

method helped to solve the cross-loading observed in the data. The Varimax rotation method also aided this study in that the EFA reported nearly 60% explanation of total variance. Reporting the data in full is necessary for critique of the decision making.

**Researchers Fully Report EFA Information.** As noted in the prior paragraph, the fully reporting of results and decision-making information is essential for researchers. Conway and Huffcutt (2003) argued that readers must be able to follow and critique all researcher decisions and results when evaluating the merit of a study. My study outlined all important decisions in EFA analysis, and then results. My results included information beyond descriptive statistics: the correlation matrix, eigenvalues, communalities, percentage of variance accounted for, the full factor loading matrix, and a rotated factor loading matrix. My results also presented Cronbach's Alpha for the original dataset and for the revised 9 item, 3-factor model. Due to my full reporting, readers may critique my decision making, not merely the results. My transparency included this chapter's discussion of my sample size, response to item ratio and variable to factor ratio, for a nuanced interpretation of my findings and results. The reader may perform their own critique of my study and its findings, which I have presented as significant co-variance among the EIL, ILI, and SRLS, as a simple structure short form of the EIL, ILI, and SRLS achieved through EFA, and as some evidence that Sport Club variables were not predictive of leadership scores in my sample.

**Researchers May Ask How They Can Improve EFA Usage and Practices.** Future researchers may improve the use of EFA practices because of transparency and self-critique. It may be argued that an orthogonal rotation method may have been more appropriate for my study based on the conceptual or realized correlation among my three leadership scales included in the study. It may also be argued that my sample size was inadequate; however, I have reported a

KMO score according to Kaiser (1974), and that the co-variance of the EIL, ILI and SRLS are significant. The sample size and response to item ratio less than 5:1 may be critiqued as less than optimal. Given the need for compellingly large samples in exploratory factor analysis, a reasonable critique of my study's size adequacy would be an important consideration when evaluating my study. Given the favorable result of my analysis of sample size adequacy prior to performing an EFA, I advise a cautious reader that further research into my proposed 3-factor, 9-item model may proceed with acknowledgement that Kaiser (1974) appraises this study's sample size adequacy to be meritorious.

On the whole, practitioners in the field of collegiate recreation may apply the following implications for practice: Sport Club administrators can optimize leadership development by affording Sport Club student leaders as many opportunities as possible to develop, implement and evaluate their own events. The recursiveness and simple operation of weekly practices did not bear significant effect size on Sport Club leadership development; but the important and deep work of putting on an appropriate and not excessive number of Sport Club events predicted leadership growth. Second, Sport Club administrators can account for the impact of annual per person team dues by tracking the team dues charged by each Sport Club each year. In the process of gathering data about team dues by club across campuses, Sport Club administrators may develop funding models that calibrate allocation of campus resources relative to the cost of Sport Club participation on a per member per year basis. Funding models for Sport Club programs is an area rich with future research potential.

## **Conclusion**

This study found no statistically significant relationship of Sport Club individual, organizational or institutional variables for a composite Sport Club leadership score in a

regression model. However, this study found that the EIL, ILI and SRLS co-varied in a Sport Club sample and that the total variance of the scales was reliably explained by a proposed 3-factor, 9-item model derived from an EFA. The idea that the experience of participating in a Sport Club leadership position appears to be more important than my hypothesized constructs and characteristics of the Sport Club environment is instructive—for there is meaning in simply participating.

With budget reductions at many colleges and universities, and an economic environment still affected by COVID-19, a broad allocation of resources to support a broad-based Sport Club program appears to be more important for leadership development than the enhancement of any of the Sport Club variables studied, including total operating budget, allocation, weekly practice hours, or annual events. Due to COVID-19, my study may necessitate replication in a year with full Sport Club operation and resources. My limited timeframe to complete this study challenged my ability to navigate the challenge posed by COVID-19 to my data collection and sample responses. As data from the 2021-2022 and future Sport Club student leader population become available, Sport Club administrators and scholars should attempt to build on my recommendations for practice and further research. There is potential for a multidimensional instrument comprised of a short form of the EIL, ILI, and SRLS to reliably measure Sport Club leadership in an accessible way using only 9 items in order to boost response rates while making possible the evaluation of leadership among Sport Club student leaders.

In conclusion, Sport Club student leaders participate in sports sanctioned by the NCAA, with differences in institutional funding, weekly practice time, number of annual competition events, and presence or absence of paid coaches. Despite differential experiences along the Sport Club variables, Sport Club student leaders practice a multidimensional form of leadership that is

inclusive of emotional intelligence, identity-based leadership, and socially responsible leadership. This study found that despite differences in Sport Club variables, Sport Club student leaders in the sample could be evaluated on their leadership using a short form of the EIL, ILI, and SRLS in a simple structure that explained 60% of the variance in the data from the sample. It is important to provide a broad-based Sport Club program at each higher education institution. Sport Club administrators would benefit from training Sport Club student leaders in emotional intelligence and identity-based leadership just as the current literature encourages development in socially responsible leadership practices. Leadership is a critical learning outcome for U.S. higher education and the role of Sport Clubs in providing leadership development for more than 2,000,000 Sport Club participants and hundreds of thousands of Sport Club student leaders (NCAA, 2020) should not be overlooked. The value of Sport Clubs and the positive leadership experiences they afford to students must be considered in institutional decision making about recognition policies, resource allocation, and facility use.

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## Appendix A

### Gardner Dissertation Survey Draft

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Start of Block: Informed Consent Gardner

Q0

**Study Participant Informed Consent                      FOR STUDENTS 18+ YEARS OF AGE**

*The general nature of this dissertation entitled “Developing A Measure Of Leadership Development For Sport Club Student Leaders: A Cross Sectional Research Design” conducted by researcher Daniel Gardner and committee chair Dr. James P. Barber, has been explained to me. I understand that I will complete a survey of approximately 15 minutes in duration. I understand that my responses will be confidential and that my name will not be associated with any published results of this study. I know that I may refuse to answer any question asked and that I may discontinue participation at any time. Potential risks resulting from my participation in this project have been described to me. I am aware that I can contact the researcher, Daniel Gardner, at dwgardner@wm.edu or by phone at 757-816-2363. I am aware that I may report dissatisfactions with any aspect of this study to Tom Ward, Chair of the School of Education Internal Review Committee at tjward@wm.edu or by phone at (757) 221-2358. I am aware that I must be at least 18 years of age to participate. My signature below, by checking “Agree”, signifies my voluntary participation in this project, and that I have received a copy of this consent form.*

*Please enter your email address, if you would like to receive a copy of the final dissertation.*

*THIS PROJECT WAS FOUND TO COMPLY WITH APPROPRIATE ETHICAL STANDARDS AND WAS EXEMPTED FROM THE NEED FOR FORMAL REVIEW BY THE W&M PROTECTION OF HUMAN SUBJECTS COMMITTEE (Phone 757-221-3966) ON 2021-07-14 AND EXPIRES ON 2022-07-14.*

---

Q00 Name (your response will be kept confidential)

---

Q000 Signature (check agree to sign)

- Agree (1)
  - Disagree (2)
- 

Q0000 Email Address (enter if you wish to receive a copy of the final dissertation)

---

End of Block: Informed Consent Gardner

---

Start of Block: Individual Demographics Gardner

Q1 What is your current Class Year?

- Freshman (4)
  - Sophomore (5)
  - Junior (6)
  - Senior (7)
- 

Q2 Which type of club team do you participate in?

- Men's Club Teams (4)
  - Women's Club Teams (5)
  - Co-Recreational Club Teams (9)
-

Q3 What is your Race/Ethnicity (choose all that apply)?

- American Indian or Alaskan Native (2)
  - Asian (9)
  - Black or African American (10)
  - Native Hawaiian or Other Pacific Islander (11)
  - White (12)
  - Some other race, ethnicity, or origin (13)
  - Prefer to self-describe (14)
  - Prefer not to say (15)
- 

Q4 Are you a Hispanic, Latinx or Spanish origin?

- Yes (2)
  - No (16)
  - Prefer not to answer (17)
- 

Q5

Does your Team have a Paid Coach?

- Yes (4)
- No (5)

---

Q6 Does your department report to Athletics or Student Affairs?

- Athletics (1)
- Student Affairs (2)
- Other (3)

End of Block: Individual Demographics Gardner

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Start of Block: Institution Demographics Gardner

Q7 How much funding was your Club Team allocated in the 2019-2020 year (pre-pandemic numbers)?

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Q8 What was your total operation budget, including member dues in the 2019-2020 year (pre-pandemic numbers)?

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---

Q9 On average, how many hours a week did your team practice in the 2019-2020 year (pre-pandemic numbers)?

---

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Q10 How many events did your club compete in in the 2019-2020 year (pre-pandemic numbers)?

---

Q11 What was the individual member dues amount in 2019-2020 year? (in dollars) (pre-pandemic numbers)

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End of Block: Institution Demographics Gardner

---

Start of Block: Identity Leadership Inventory Questions Gardner

Q12 I am a model member of my group.

- Completely Agree (1)
  - Mostly Agree (2)
  - Somewhat Agree (4)
  - Neither Agree nor Disagree (6)
  - Somewhat Disagree (7)
  - Mostly Disagree (8)
  - Completely Disagree (9)
- 

Q13 I exemplify what it means to be part of the group.

- Completely Agree (1)
- Mostly Agree (2)
- Somewhat Agree (4)
- Neither Agree nor Disagree (6)
- Somewhat Disagree (7)
- Mostly Disagree (8)
- Completely Disagree (9)

---

Q14 I act as a champion of my group.

- Completely Agree (1)
  - Mostly Agree (2)
  - Somewhat Agree (4)
  - Neither Agree nor Disagree (6)
  - Somewhat Disagree (7)
  - Mostly Disagree (8)
  - Completely Disagree (9)
- 

Q15 I stand up for my group.

- Completely Agree (1)
  - Mostly Agree (2)
  - Somewhat Agree (4)
  - Neither Agree nor Disagree (6)
  - Somewhat Disagree (7)
  - Mostly Disagree (8)
  - Completely Disagree (9)
-

Q16 I make people feel as if they are part of the same group.

- Completely Agree (1)
  - Mostly Agree (2)
  - Somewhat Agree (4)
  - Neither Agree nor Disagree (6)
  - Somewhat Disagree (7)
  - Mostly Disagree (8)
  - Completely Disagree (9)
- 

Q17 I create a sense of cohesion within the group.

- Completely Agree (1)
  - Mostly Agree (2)
  - Somewhat Agree (4)
  - Neither Agree nor Disagree (6)
  - Somewhat Disagree (7)
  - Mostly Disagree (8)
  - Completely Disagree (9)
-

Q18 I devise activities that bring this group together.

- Completely Agree (1)
  - Mostly Agree (2)
  - Somewhat Agree (4)
  - Neither Agree nor Disagree (6)
  - Somewhat Disagree (7)
  - Mostly Disagree (8)
  - Completely Disagree (9)
- 

Q19 I arrange events that help this group function effectively.

- Completely Agree (1)
- Mostly Agree (2)
- Somewhat Agree (4)
- Neither Agree nor Disagree (6)
- Somewhat Disagree (7)
- Mostly Disagree (8)
- Completely Disagree (9)

End of Block: Identity Leadership Inventory Questions Gardner

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Start of Block: EILS:I - Short Form Gardner

Q20 I Demonstrate confidence.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
- 

Q21 I Recognize how my emotions influence my actions.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
- 

Q22 I understand how the group members relate to one another.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
-

Q23 I learn the expressed and implicit values of the group.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
- 

Q24 I take time to understand the informal traditions of the group.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
- 

Q25 I understand how the group's environment influences my leadership style.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
-

Q26 I think about how my leadership style aligns with group culture.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
- 

Q27 I identify external influences on the group.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
- 

Q28 I consider ways to improve the group's performance through innovation.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
-

Q29 I inspire commitment to the group's vision

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
- 

Q30 I build relationships with ease.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
- 

Q31 I help others enhance their abilities.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
-

Q32 I emphasize team goals.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
- 

Q33 I address conflict with individuals effectively.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
- 

Q34 I find common ground among different points of view.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
-

Q35 I adapt my approach to leadership based on the situation.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
- 

Q36 I align my actions with the values of the group.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
- 

Q37 I follow through on my commitments to the group.

- Always (2)
  - Frequently (3)
  - Sometimes (4)
  - Infrequently (5)
  - Never (6)
-

Q38 I place a high value on the feelings of others.

- Always (2)
- Frequently (3)
- Sometimes (4)
- Infrequently (5)
- Never (6)

End of Block: EILS:I - Short Form Gardner

---

Start of Block: MSL Socially Responsible Leadership Scale

Q39 I am open to others' ideas.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q40 I value differences in others.

- Strongly agree (1)
- Somewhat agree (2)
- Neither agree nor disagree (3)
- Somewhat disagree (4)
- Strongly disagree (5)

---

Q41 I am able to articulate my priorities.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q42 Hearing differences in opinions enriches my thinking.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q43 I am usually self-confident.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
-

Q44 I am seen as someone who works well with others.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q45 My behaviors are congruent with my beliefs.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q46 I respect opinions other than my own.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
-

Q47 I know myself pretty well.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q48 I am willing to devote the time and energy to things that are important to me.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q49 I stick with others through difficult times.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
-

Q50 It is important to me to act on my beliefs.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q51 I am focused on my responsibilities.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q52 I can make a difference when I work with others on a task.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
-

Q53 I actively listen to what others have to say.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q54 My actions are consistent with my values.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q55 I believe I have responsibilities to my community.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
-

Q56 I could describe my personality.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q57 I work with others to make my communities better places.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q58 I can describe how I am similar to other people.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
-

Q59 I enjoy working with others toward common goals.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q60 I participate in activities that contribute to the common good.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q61 Others would describe me as a cooperative group member.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
-

Q62 I can be counted on to do my part.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q63 Being seen as a person of integrity is important to me.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q64 I follow through on my promises.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
-

Q65 I hold myself accountable for responsibilities I agree to.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q66 I am comfortable expressing myself.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q67 My contributions are recognized by others in the groups I belong to.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
-

Q68 I share my ideas with others.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q69 My behaviors reflect my beliefs.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q70 I value opportunities that allow me to contribute to my community.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
-

Q71 It is important to me that I play an active role in my communities.

- Strongly agree (1)
  - Somewhat agree (2)
  - Neither agree nor disagree (3)
  - Somewhat disagree (4)
  - Strongly disagree (5)
- 

Q72 I believe my work has a greater purpose for the larger community.

- Strongly agree (1)
- Somewhat agree (2)
- Neither agree nor disagree (3)
- Somewhat disagree (4)
- Strongly disagree (5)

End of Block: MSL Socially Responsible Leadership Scale

---

Start of Block: Conclusion

Q73 Thank you for taking this survey. Your response will help inform Sport Club student leadership development programs in the future. If you want to be entered for a drawing for one of 3 \$50 Amazon gift cards, please enter your email in this survey's follow-up email message to you.

End of Block: Conclusion

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## Appendix B

### Information for IRB/Human Subjects Approval

#### **Title: Developing A Measure Of Leadership Development For Sport Club Student Leaders: A Cross Sectional Research Design**

**Brief Description:** Studies show that participation in recreational activities during college has a positive impact on educational experiences as well as leadership development. Recent white papers published by the National Intramural Recreational Sports Association (NIRSA) find that student leaders of Sport Clubs do not show leadership efficacy and capacity gains as may be expected as a result of their time as a Sport Club officer. Therefore, it is important to assess Sport Club officer leadership development with the context of the Sport Club experience.

This student study assesses:

- The impact of Sport Club contextual factors on Sport Club officer leadership development
- Multiple leadership constructs which may form an aggregate Sport Club leadership construct
- Ways in which Sport Club officers express leadership skills and behaviors
- General Sport Club officer needs pertaining to their experience as a leader of a Sport Club team

The Study provides aggregate data from the population of Virginia higher education institutions. By participating in this study, your institution is not agreeing to have its student data identified in the dataset; the study will not identify any institutions or names of respondents in its reporting.

**Background:** The survey instrument was designed in 2021 by Daniel Gardner, Campus Recreation Assistant Director at the College of William & Mary. The survey instrument includes three scales from existing survey instruments. The instrument was modified to be a short form of the three original scales. The instrument was reviewed by the researcher's dissertation committee to ensure that the questions were easy to understand, and that the questions were relevant.

**Population:** The whole population of Virginia higher education institution Sport Club student leaders will be sent the survey invitation. No minors will be invited to participate in this study.

**Subject Recruitment:** Students will be invited to participate in the study through an invitation sent to their email address (see Appendix C) by forwarded email from their Sport Club administrator. The email will contain a link to the online survey.

Given that this is an online survey, the researcher will have no contact with participants as it pertains to the survey; but, the researcher will have contact with the Sport Club administrators of Virginia higher education institutions.

**Methods/Procedures:** All data collection will occur via an online survey. The survey will be open for approximately four weeks. In addition to the initial email, students will be sent two reminders via email. Survey completion is estimated at no more than 15 minutes, although some students may require additional time to complete the survey.

The researcher will have access to the data in real-time as it is being collected through a secure, password-protected reporting site (Qualtrics). Data encryption and other measures will ensure the security of the data (see below for full security details). All data will be compiled in aggregate and no individual respondents will be identified. Data will be available through the online reporting site for an indefinite amount of time unless the College of William & Mary in Virginia instructs the researcher to purge their data.

At no time will a campus name be linked to any data reported in the findings.

Data will be analyzed using quantitative methodologies. In almost all instances, descriptive statistics will be reported, in addition to more advanced quantitative data analysis.

**Informed Consent:** Students will be asked to provide their consent through the email invitation to participate in the survey (Appendix C). If having the informed consent in the email only is not sufficient, a separate start page will be added as the first page of the online survey that allows respondents to check a box that they understand that they are providing their informed consent.

**Anonymity/Confidentiality:** No individual response to the survey will ever be identified in any report. Rather, all resulting data will be reported in the aggregate. All identifiable information will be visible only to the email server and is blocked from viewing by all others besides the researcher. The administration of the survey can be dictated by institutional requirements related to anonymity and confidentiality in that all reminders shall be sent to the entire sample because the survey does not utilize unique/identifiable links sent to each possible respondent.

**Risks/Benefits:** While survey research presents minimal risks, students may be uncomfortable answering some of the questions. Participation is voluntary. Students may opt to skip any questions that they do not wish to answer. If students do experience any discomfort, they will be encouraged in the email invitation to contact the researchers.

The survey provides a better understanding of the characteristics of college students who hold positional leadership roles in Sport Club teams. The survey will result in direct benefits for students, such as enhanced programming efforts related to sport club officer training, development, support and helpful resources.

**Deception:** Deception will not be used in this study.

**Compensation:** Students will receive a follow up Qualtrics email upon completion of the survey, providing the students an opportunity to provide their email as entry to a gift card drawing.

**Data Security:** All data will be stored through W&M servers and will only be accessible through a unique username and password using current W&M IT security practices. Protection at the network level includes current W&M IT practices.

## Appendix C

### Student Email Invitation

Sender: Daniel Gardner

Subject lines: Sport Club Leadership Development Survey; REMINDER: Sport Club Leadership Development Survey; LAST CHANCE: Sport Club Leadership Development Survey

Dear Sport Club Student Leader:

In an effort to serve Sport Club student leaders better, I would like for you to respond to this survey which should take approximately 15 minutes to complete. This survey will look at your experiences as a Sport Club student leader and the contexts in which you exercise leadership skills and behaviors. It is our goal to take this information and build on leadership development training and Sport Club programs that you participate in each day.

Please be assured that your answers are confidential. No individual's answers will ever be identified in any report. In addition, your participation is voluntary, and if you choose to submit your email after completing the survey, you will be entered into a \$50 gift card raffle! By clicking on the SURVEY LINK, you are indicating your willingness to participate in this survey. You understand you are free to discontinue participation at any time if you so choose and that the researcher (Daniel Gardner, [dwgardner@wm.edu](mailto:dwgardner@wm.edu) and 757-816-2363) will gladly answer any questions that may arise during the course of the research.

The survey should take approximately 15 minutes to complete. You may access the survey by clicking on the link below:

[Click here]

Or you can cut and paste the following link into your web browser:

[Full link here]

If you have any difficulty logging in, please e-mail [support@wm.edu](mailto:support@wm.edu) or call 757-221-4357.

You may report dissatisfactions with any aspect of this evaluation to the Chair of the Protection of Human Subjects Committee, Dr. Tom Ward, 757-221-2358 or [tjward@wm.edu](mailto:tjward@wm.edu).

Should you have any questions about the project or our interest in using the results, I encourage you to contact me for answers.

Thank you for your participation!

Sincerely,

Daniel Gardner

THIS PROJECT WAS FOUND TO COMPLY WITH APPROPRIATE ETHICAL STANDARDS AND WAS EXEMPTED FROM THE NEED FOR FORMAL REVIEW BY

THE W&M PROTECTION OF HUMAN SUBJECTS COMMITTEE (Phone 757-221-3966)  
ON 2021-07-14 AND EXPIRES ON 2022-07-14.

## Appendix D

### Administrator Email Invitation

Sender: Daniel Gardner

Subject lines: Sport Club Leadership Development Survey; REMINDER: Sport Club Leadership Development Survey; LAST CHANCE: Sport Club Leadership Development Survey

Dear Sport Club Administrator (or INSERT NAME):

I am developing a new Sport Club leadership instrument and need your help. Would you please forward the attached survey Student Email Invitation and Informed Consent to your Sport Club officers and encourage them to complete it? The survey should take approximately 15 minutes to complete.

Students will have the opportunity to optionally enter their email address after taking the survey, to be entered into a \$50 gift card raffle. Please be assured that student answers are confidential. No individual's answers will ever be identified in any report. Students are free to discontinue participation at any time if they so choose. Students may contact me (Daniel Gardner, [dwgardner@wm.edu](mailto:dwgardner@wm.edu) and 757-816-2363) and I will gladly answer any questions that may arise during the course of the research.

If your students have any difficulty logging in, please e-mail [support@wm.edu](mailto:support@wm.edu) or call 757-221-4357.

You may report dissatisfactions with any aspect of this evaluation to the Chair of the Protection of Human Subjects Committee, Dr. Tom Ward, 757-221-2358 or [tjward@wm.edu](mailto:tjward@wm.edu).

Should you have any questions about the project or our interest in using the results, I encourage you to contact me for answers. I anticipate being able to share my published dissertation with you.

Thank you for your participation!

Sincerely,

Daniel Gardner

THIS PROJECT WAS FOUND TO COMPLY WITH APPROPRIATE ETHICAL STANDARDS AND WAS EXEMPTED FROM THE NEED FOR FORMAL REVIEW BY THE W&M PROTECTION OF HUMAN SUBJECTS COMMITTEE (Phone 757-221-3966) ON 2021-07-14 AND EXPIRES ON 2022-07-14.

**Appendix E**  
**Informed Consent**

**Study Participant Informed Consent**  
**FOR STUDENTS 18+ YEARS OF AGE**



The general nature of this dissertation entitled “Developing A Measure Of Leadership Development For Sport Club Student Leaders: A Cross Sectional Research Design” conducted by researcher Daniel Gardner and committee chair Dr. James P. Barber, has been explained to me. I understand that I will complete a survey of approximately 15 minutes in duration. I understand that my responses will be confidential and that my name will not be associated with any published results of this study. I know that I may refuse to answer any question asked and that I may discontinue participation at any time. Potential risks resulting from my participation in this project have been described to me. I am aware that I can contact the researcher, Daniel Gardner, at [dwgardner@wm.edu](mailto:dwgardner@wm.edu) or by phone at 757-816-2363. I am aware that I may report dissatisfactions with any aspect of this study to Tom Ward, Chair of the School of Education Internal Review Committee at [tjward@wm.edu](mailto:tjward@wm.edu) or by phone at (757) 221-2358. I am aware that I must be at least 18 years of age to participate.

My signature below, by checking “Agree”, signifies my voluntary participation in this project, and that I have received a copy of this consent form.

Type Name: \_\_\_\_\_

Enter Date: \_\_\_\_\_

AGREE BOX  
DISAGREE BOX

Please enter your email address, if you would like to receive a copy of the final dissertation.

\_\_\_\_\_

THIS PROJECT WAS FOUND TO COMPLY WITH APPROPRIATE ETHICAL STANDARDS AND WAS EXEMPTED FROM THE NEED FOR FORMAL REVIEW BY

THE W&M PROTECTION OF HUMAN SUBJECTS COMMITTEE (Phone 757-221-3966)  
ON 2021-07-14 AND EXPIRES ON 2022-07-14.

## Appendix F

### Daniel Gardner CITI Program Certificate



Completion Date 13-Dec-2021  
Expiration Date 12-Dec-2024  
Record ID 44982317

This is to certify that:

**Daniel Gardner**

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

**School of Education/EDIRC**  
(Curriculum Group)

**School of Education/EDIRC**  
(Course Learner Group)

**2 - Refresher Course**  
(Stage)

Under requirements set by:

**William & Mary**



Verify at [www.citiprogram.org/verify/?w6608849d-d2d4-4ad0-b601-ec1fe0a3c428-44982317](http://www.citiprogram.org/verify/?w6608849d-d2d4-4ad0-b601-ec1fe0a3c428-44982317)

## **Appendix G**

### **Listing of Sport Club National Governing Bodies**

USA Badminton (Club Badminton), USA Dance (Club Ballroom Dance), National Collegiate Baseball Association (Club Baseball), USA Cycling (Club Cycling), International Horse Show Association (Club Equestrian), USA Fencing (Club Fencing), National Field Hockey League (Club Field Hockey), National Collegiate Club Golf Association (Club Golf), National Association of Intercollegiate Gymnastics Clubs (Club Gymnastics), American Collegiate Hockey Association and Atlantic Coast Club Hockey League (Club Ice Hockey), National Club Basketball Association (and National Club Basketball Association – Women) and NIRSA Basketball (Club Basketball), Men’s Collegiate Lacrosse Association and Women’s Collegiate Lacrosse Association (Club Lacrosse), USA Rugby and National Collegiate Rugby (Club Rugby), NIRSA Soccer (Club Soccer), USA Ultimate (Club Ultimate), National Collegiate Volleyball Federation (Club Volleyball), US Quidditch (Club Quidditch), USA Racquetball (Club Racquetball), USA Climbing (Club Rock Climbing), US Rowing (Club Rowing), Collegiate Running Association (Club Running), Inter-Collegiate Sailing Association (Club Sailing), International Shotokan Karate Federation (Club Shotokan Karate), National Club Softball Association (Club Softball), US Squash (Club Squash), Collegiate Club Swimming (Club Swimming), USA Synchro (Club Synchronized Swimming), National Collegiate Club Table Tennis Association (Club Table Tennis), National Collegiate Taekwondo Association (Club Taekwondo), United States Tennis Association (Club Tennis), USA Triathlon (Club Triathlon), Club Water Polo Association (Club Water Polo), and National Collegiate Wrestling Association (Club Wrestling).

Vita

**DANIEL WILLIAM GARDNER**

Assistant Director of Sport Clubs  
College of William & Mary  
400 Brooks Street  
Williamsburg, VA 23185  
dwgardner@wm.edu | 757-221-2959

EDUCATION

Doctor of Education, Higher Education  
Program: Education Policy, Planning and Leadership  
Concentration: Higher Education  
William & Mary, 2022

Dissertation in progress: *Developing A Measure Of Leadership Development For Sport Club Student Leaders: A Cross Sectional Research Design*

Master of Education, Higher Education Administration  
William & Mary, 2013

Bachelor of Arts, History  
Virginia Tech, 2011

RESEARCH

**Work in progress or submitted**

Gardner, D.W. (revise and resubmit). A new sport club leadership program using an action research framework, *Recreational Sports Journal*.

HIGHER EDUCATION EXPERIENCE

Assistant Director of Sport Clubs  
William & Mary, Williamsburg, Virginia  
July 2017 to Present

Assistant Director of Intramural Sports  
George Washington University, Washington, DC  
January 2015 to June 2017

Assistant Director of IM Sports & Sport Clubs  
University of Mary Washington, Fredericksburg, Virginia  
June 2013 to January 2015